


WESTERN INDUSTRY



* California is rapidly becoming the world style center. Designer marks material for a sample dress in a San Francisco plant.

Five Cents

VOLUME XI

NUMBER 2

August, 1946



WHICH ONE WOULD YOU CHOOSE?

COMFORT TOO SAVES MONEY

Give your burner a cutting torch with the maximum comfort value. Some prefer the high pressure valve lever on top, some on the bottom, some in front and some in the rear of the torch. Which of these VICTOR hand cutting torches do you like the best? Of one thing you can be sure—no matter what the choice, VICTOR cutting torches are designed for maximum operating speed and minimum ownership cost.



VICTOR EQUIPMENT COMPANY

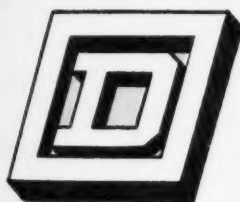
844 FOLSOM ST. • SAN FRANCISCO 7, CALIFORNIA



SQUARE D ...

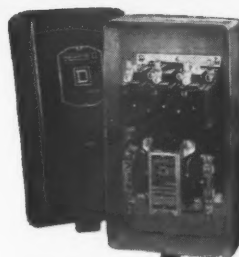
Dependable

CONTROL

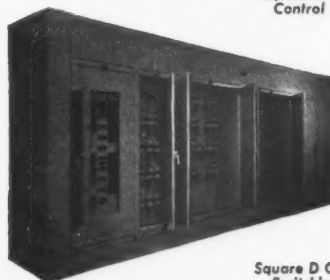


**THE MARK OF ELECTRICAL
CONTROL EQUIPMENT ...
DEPENDABLE FOR UNINTER-
RUPTED, TROUBLE-FREE
PERFORMANCE!**

Today—more than ever—successful industry requires unwavering efficiency in electrical control. The very *quality* of your production revolves around it. And so the advanced scientific engineering of SQUARE D equipment is geared to meet those needs. The name, SQUARE D, is symbolical of adequate electrical control—the essence of sound construction; correct, simplified design, and reliable operation.

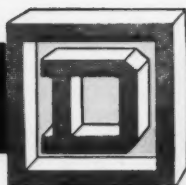


Square D Motor
Control Unit



Square D Control
Switchboard

Call your nearest Square D Engineer or Distributor for invaluable assistance in solving your electrical problems or needs.



SQUARE D COMPANY

LOS ANGELES

DETROIT

MILWAUKEE

"The Bumble Bee cannot fly"



BUT TUBING CAN!

According to the laws of aero-dynamics, the bumble bee's size, weight and shape of his body, in relation to his total wing-spread, renders flying impossible. Of course, the bumble bee, totally disinterested in scientific theory, flies and makes a little honey each day.

In contrast, the west's only steel tube mill is supplying AVIATION'S varied requirements for high, quality seamless, cold-drawn tubing of many analyses. Yes, our tubing can fly and is flying as component parts in many of the country's most reliable and outstanding airplanes.

For information on availability and how you may be able to cut fabricating or processing costs with steel tubing and bar stock, contact Pacific Tube Co., 5704 Smithway, Los Angeles 22, California. ANgelus 2-2151.

*Consult our
Customer Service
Dept. on . . .*

*Seamless Carbon and Alloy Tubing,
Welded Carbon Tubing, Seamless
Stainless Steel Tubing, Cold Finished
Bar Stock.*

**TUBING
and
BAR STOCK
by
PACIFIC**

PACIFIC TUBE COMPANY

EDITORIAL COMMENT

You Can See Better From Above

COMPARISONS of the industrial trends of the West in wartime with those of today may be likened to two movements of a stream of water.

In the first instance the stream courses down a flume or ditch, swift and sure in a single direction. In the second it is turned out on the land and flows slowly and uncertainly, first building up a pool in a nearby low spot, next gradually twisting an opening in another direction, then backing up against a temporary obstruction, with the ultimate movement very much in doubt if viewed from just a few inches above the ground. From the vantage point of thezanjero or ditch tender as he looks down from the bank, however, the location of the obstacles and openings and the variation in levels is more easily apparent.

Just so, industry needs occasions to get up on the bank and see where the flow of development is headed. From the lower level of daily operations things farther away are not so easily seen, nor is the perspective always reliable.

It has been disappointing that Western conferences where the postwar situation and trends could be reported on and studied have not materialized earlier, but now one of these occasions is in prospect. It is a state-wide industrial development conference for educational purposes in Los Angeles in September, sponsored by the industrial plant location committee of the California State Chamber of Commerce.

More such meetings are needed in other Western states, and most of all regional conferences for the whole West. Perhaps the Western States Council will feel ready to undertake the latter in due time.

A Practical Lesson For the West

BECAUSE the West approached the Geneva steel mill disposal problem unitedly, and on a straightforward basis of reaching a solution that would best serve the economic interest of the whole West, a prompt and satisfactory sale has been effected. Now this big mill is in position to become a primary factor in the industrial development of the West.

If the problem had been approached obliquely instead of objectively, in the realms of politics, ballyhoo and local or personal self-interest, Geneva might easily have become a political football, like Muscle Shoals after World War I. Fortunately all such considerations were avoided.

As the Geneva experience is a good lesson for the West, both in all-western cooperation and in the application of common sense to a complicated and important question, considerable space is devoted in this issue of *Western Industry* to a historical review of the case. Many more such problems may arise in the future and the West will do well to follow the Geneva procedure each time.

Impossibilities Never Occur

IN WARTIME, everyone took delight in accomplishing the impossible. Now an industrial engineer tells us of a street car company increasing its gross revenue 25 per cent by putting turnstiles on all its cars, so evidently the impossible also can be achieved in peacetime, even in such a marginal business as this one, which seems to be having a desperate struggle everywhere to keep its head above water.

WESTERN INDUSTRY

CONTENTS FOR AUGUST, 1946

Spotlight on the News	6
Industry's Stake in Western Congressional Elections	35-37
Which Tool Is Best?—Western Air Plants Face a \$64 Question	38-39
Wanted For The West—A Labor Policy Fair to Employers, Too	40-41
Proper Salary Policy Is Needed For Spending Personnel Dollars	42-43
Geneva Steel Outcome Due to Western Industrial Teamwork	44-46
Eastbound—Rate Discrimination	47-48
Silverware Workers Seek Jobs in Spokane	48
Plant School—Workers Like It	49
Washington Correspondence	50-52
Alcoa's Vancouver Production Study	52
Westerners At Work	53-54
Kaiser Comes Up With Giant 60-Foot, Light Metals Bus	56
Regional Reviews:	
Sierras to the Sea	58
Tehachepi to Tijuana	59
Olympics to the Coeur d'Alenes	60-61
The Columbia Empire	62-63
The Continental Divide	64-67
The Wasatch Front	68-69
Labor and the Industrial West	70-71
Workers Told of the Six Critical Weeks	72
The Western Outlook: News and Statistics	74-75
The West On Its Way	77-84
Trade Winds	85-86
The Showcase	87-88
Yours For The Asking	89
Advertisers' Index	90

OUR COVER PICTURE

* One of the designers who have made California clothes world famous, Joy Shilton, of Caldwell Dress Mfg. Co., San Francisco, marks material.

A. C. PRENDERGAST, Editor
DUDLEY F. STEVENS, Associate Editor
S. S. MORRILL, Assistant Editor

Editorial Correspondents

Washington, D. C.: ARNOLD KRUCKMAN, Associate Editor, 1120 Vermont Ave., N.W., Washington 5, Telephone District 8822.
Los Angeles: STERLING GLEASON, 1010 Magnolia Ave.
Denver: HENRY W. HOUGH, 1151 Humboldt St.
Salt Lake City: O. N. MALMQUIST, c/o Salt Lake Tribune

35c PER MONTH

\$4.00 PER YEAR

Copyright 1946 by King Publications

Published Monthly by King Publications

503 MARKET STREET YUKON 1537 SAN FRANCISCO 5, CALIF.
Please address all communications to the San Francisco office

Los Angeles Office: J. E. BADGLEY, District Manager, 3835 Wilshire Blvd., Los Angeles (5), Telephone FAirfax 2301.

Chicago Office: A. C. PETERSEN, District Manager, 5833 S. Spaulding Avenue, Chicago 29, Telephone: PRospect 1685.

New York Office: RALPH E. DORLAND, District Manager, 2225 Coles Ave., Scotch Plains, N. J.

Entered as second-class matter December 6, 1945, at the post office at San Francisco 1, California, under the Act of March 3, 1879.

Spotlight

on the NEWS

WESTERN INDUSTRY
FOR AUGUST, 1946

VOLUME XI

NUMBER 8



Facts are even more significant than the figures in the forecast of the California Reconstruction and Reemployment Commission that non-agricultural employment in California this month will be only 100,000 to 200,000 below the wartime peak of August, 1943, and that agricultural employment will exceed 1943. Even at the lowest estimate of non-agricultural employment, 2,953,000, this classification is 740,000 above the April, 1940, level.

In those hectic war days it took as high as five people to do one person's work, for lack of time to train inexperienced and inefficient workers, or to smooth out production into a steady flow. Today's employment figures contain no such padding.

The eleven Western states as a whole show the same general upward trend, although the Portland area now seems to be at the bottom of its postwar drop and Seattle has not quite reached it. The rest of Oregon outside of Portland, however, is very active.

In the mountain area the employment level is well above 1940 and the short term outlook is optimistic. Like the coast, there has been a big increase in small business enterprises. Conditions are generally good, except for mining, but contraction of seasonal industries may lead to a big decline in employment next fall.



Unemployment Racket

Finally someone has come out and blasted the unemployment compensation racket wide open. Honors go to the California Manufacturers Association for reporting some of the very smelly cases resulting from the fact there is no very clear definition of just what unemployment is under the California status.

Unemployment compensation is all too easy to draw, because the individual is not required to take any job that is available, but is privileged to wait until "suitable employment" for which he is qualified appears. California Manufacturers Association complains that compensation consequently has become a "right" to which

any unscrupulous person is entitled while looking for the particular kind of a job he wants, or while he wants to take a vacation.

CMA contends that there is a "near labor famine" in many industries, which the California Employment Stabilization Commission denies. The commission says the total number on compensation in California is larger than elsewhere because one-third of the postwar unemployment occurred in California, but that the volume of claims has for several months decreased at a more rapid rate than in the country as a whole.



Rubber in Status Quo

Synthetic rubber projects, including the one in Southern California, are not going to be sold to private industry just yet, despite the recommendation of War Assets Administration to Congress.

Actually WAA doesn't want the change to be made just yet, because natural rubber is not yet plentiful enough to meet the demand. The synthetic projects are operating for the benefit of the entire industry, and everyone gets a proportionate share of the output. If the individual copolymer, styrene and butadiene units were sold, each private operator naturally would look after his own needs first, and someone likely would go hungry.

All WAA wants is to pave the way for quicker action when the time comes. Bids were received up to July 15 for the styrene unit in the Southern California project now operated by Dow Chemical Co., but it is understood Dow did not enter a bid. Standard, Shell and Southern California Gas Co. operate the butadiene units in the project, and Goodyear and U. S. Rubber the copolymer plants. When the time does come for disposal, it is expected the project will split up into two natural integrated groups.



Break For the West

The West is getting a break over the rest of the country in housing. Almost 25 per cent of the new dwelling

units (24.2 per cent, to be exact), authorized (except rural farm housing and housing for educational institutions and public organizations) from January 15 to June 28 this year were in the 11 Western states.

Out of a total of 576,721 units for the entire country, 139,813 were granted for the Western area.

But despite the crying demand for housing, Civilian Production Administration officials report that more often than not the veterans say something like this: "Nuts to the housing; we can move in with the folks. What I want is to get a plumbing shop started."



Guaranteed Profit

Washington is making an interesting experiment in help for veterans. Under the so-called self-employment plan, the veteran starting in business for himself is guaranteed a net profit of \$100 a month for ten complete months and a fractional allowance for the eleventh.

The Unemployment Compensation Agency examines his records, and if his net profit is less than \$100, the state will make up the difference. Most of the 1,600 veterans drawing this allowance are in agriculture, but the unusual occupations reported include manufacturing plastic jewelry, window displays and model airplanes and toys.



Pre-Fab Troubles

Pre-fabricated housing, the much-talked-of answer to immediate housing needs, seems to be having just as many troubles in delivering the finished product as the ordinary form of dwelling.

Shortage of lumber, nails and hardware, coupled with other obstacles, such as the necessity for buying scarce items in small lots and odd sizes at high prices, have joined to make the development slow. In June less than 500 men were engaged in this industry in Washington, and more than half were working for one major producer whose output was then approaching 10 units a day.

In Our Mail Box

Shipsaw Again

Editor, *Western Industry*:

In the May issue of your magazine, executives of the Aluminum Company of America objected to the Shipsaw label on the Alcoa horse in your excellent cartoon, "The Aluminum Derby."

I should like to point out that the Shipsaw project is widely recognized as a threat to the jobs of American aluminum workers. The RFC, by generous price and financing arrangements, made Shipsaw the lowest cost aluminum in the world. During 1944 and 1945 Shipsaw aluminum curtailed employment of Washington State workers by hastening shutdowns of our own aluminum plants.

It may keep us from producing aluminum that should go to foreign markets. Shipsaw aluminum is now selling in England at 12 cents per pound. Aluminum produced in Washington State sells at 14 cents. And the Surplus Property Board reported to Congress that Shipsaw aluminum can even come into this country despite a 3-cent tariff and take markets and jobs away from our own business men and workers.

It is not my contention that consumers of aluminum should be deprived of opportunities for the lowest possible price, or that restrictions should be placed in the way of international trade.

I do say, however, that in the long run, the only guarantee of low prices will be a vigorous competitive aluminum industry that will meet the industrial needs of the West, as well as other sections of the country. Price policies adopted by a monopoly to drive competitors out of the field confer no lasting benefits. This is demonstrated by the history of the aluminum monopoly.

As for Alcoa's connection with Shipsaw, a formal ruling by the court is no clue to the problem of Canadian competition. (See my remarks in the Congressional Record, December 21, 1945.) The Surplus Property Administration had this to say in a report to the Senate Military Affairs Committee, January 6, 1946.

"Alcoa attempts to create the impression that Aluminum Ltd. of Canada is independent of Alcoa. Our reply shows the falsity of this contention; among other things it refers to a memorandum which shows that in 1941 the officials of the War Production Board understood that the Shipsaw project which gave a substantial subsidy to the Canadian company was to be negotiated by Arthur V. Davis (chairman of Alcoa). A careful reading of Alcoa's letter shows that it does not anywhere deny that the same small group of persons who control Alcoa also control the Canadian company."

I am devoting considerable time and effort in Congress to the advancement of Western industry, financed by Western

capital and managed by Western businessmen. I believe that the more the West owns and manages its own industries, the greater will be the employment opportunities for its workers.

We welcome, of course, industrialists from other sections of the country. But we have a right to expect that their connections with industry in the East or abroad should not interfere with our effort to expand production and employment in the West.

HUGH B. MITCHELL
United States Senate
Washington, D. C.

Arizona Studies Industry

Editor, *Western Industry*:

Like most of the other Western states, Arizona is beginning to realize the importance of diversifying its economy. Prior to the war, we made very little use of our raw materials, except to export them in their native condition. A great deal of study is now being devoted to the manufacturing of more things that we need for our own consumption, as well as the processing and fabricating of raw materials for export.

Several organizations are now engaged in studying this matter, chief of which are Greater Arizona, Inc., a state-wide development group, and the industrial committee of the Phoenix Chamber of Commerce. The writer is a member of both organizations.

As we get more information assembled and coordinated, we shall be glad to have your cooperation in giving it publicity.

H. A. LEGGETT
Statistician, Valley National Bank
Phoenix, Ariz.

Fifth Reprint Request

Editor, *Western Industry*:

Your December, 1945, issue contained a very fine article entitled "Skilled Management Agents Should Handle Negotiating."

May we have your permission to reprint excerpts from this article, with credit to you, of course.

Your cooperation in this respect will be much appreciated.

THE ASSOCIATED INDUSTRIES
OF CLEVELAND

Chester Nikodym, General Manager.

From NAM

Editor, *Western Industry*:

We appreciate very much your editorial comment on "NAM and Public Relations" in the June number of *Western Industry*. I regret that as this is written, I am unable

to go into detail on our proposed efforts to urge our membership and management generally to exercise extreme vigilance during the coming months against inordinate price increases. As soon as our plan is complete I will see to it that you are brought up to date.

HOLCOMBE PARKES

Vice-President in charge of
Publication Relations

National Association of Manufacturers.

Finds It Useful

Editor, *Western Industry*:

Certainly the quality of the magazine deserves an answer, no matter how rushed. . . . The article, "More Branch Factories for the West" in the May, 1946, issue is on file for frequent reference. . . . Several other articles on metals have gone into the files for permanent reference. . . . We have had to do our own forecasting and use our own judgment and *Western Industry* has contributed some help, particularly in the manufacturing and sales end. . . . I feel the distribution of news, information, etc., which goes on today in the U. S. A. is one of the things which made us able to arise to the war and win it.

R. P. HINES
District Manager
Stephens Adamson Mfg. Co.
Portland, Oregon.

A Few Bouquets

Editor, *Western Industry*:

Mr. Kruckman has been very flattering in his comments. They are none the less appreciated greatly. One can but have a great appreciation for Mr. Kruckman's keen writing of what goes on in the nation's capital. I am glad to know that your publications are supporting the work of the Western States Council as they have many other western development projects.

FLOYD O. HAGIE
Executive Vice-President
Seattle Chamber of Commerce.

Editor, *Western Industry*:

Western Industry is the only "over-all" informative publication of the Western U. S. The practical value to its readers makes it more important. We appreciate knowing how and where the West is progressing.

F. N. AVERILL
Northwest Sales and Service
Manager
Harris Mfg. Co.
Walla Walla, Wash.

Editor, *Western Industry*:

Western Industry is thoroughly read by many in our organization and has proven of considerable value to us. We would not want to miss an issue.

S. H. CLARKE
Asst. Gen. Mgr.
The Roundup Coal Mining
Company
Roundup, Montana

even steam can't remove it



Cycol Black Lustre Grease

Every experiment to date shows Cycol Black Lustre Grease to withstand salt water, acids, and steam better than any other type of cup grease. Especially recommended for canneries, breweries, and plants where destructive elements come into contact with the lubricant.

• • •

Try it yourself. Apply Cycol Black Lustre Grease to a polished metal surface. Then try to remove it with live steam or hot water. Just can't be done. Which is why this Associated product has been

put to such successful use in plants of all types throughout the West.

Cycol Black Lustre Grease is available in four grades: 1, 2, 3, and 4, ranging from semi-fluid to hard consistency. Grades 1 and 2 make excellent cable dressings, penetrating into the core for longer cable life. Heavier grades are excellent lubricants for compression grease cups of all types and for crank pins on steam engines.

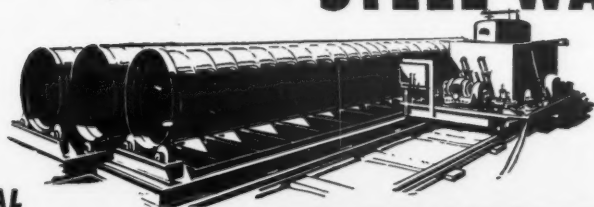
Tell Your Associated Dealer You Want a Credit Card

**Correct Lubrication
is Machinery's Most
Vital Need**



**TIDE WATER
ASSOCIATED
OIL COMPANY**

Spun Coal Tar ENAMELED STEEL WATER PIPE



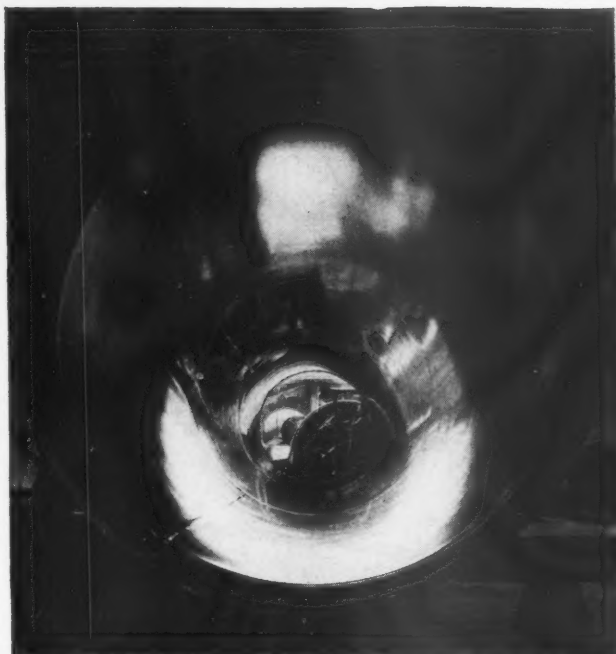
●FOR ECONOMICAL LONG-LIVED PROTECTION!

More than a million feet of corrosion resistant Western enameled steel pipe today delivers water to the communities of the West. This smooth-walled pipe provides a 10% greater volume of water flow than offered by asphalt dipped or bare pipe. Pumping costs, as a result, are materially reduced.

Enameling, inside and out, assures long life and economy of maintenance and operation.

High-temperature methods of applying anti-corrosive enamel have produced a water and soil corrosion-resistant welded pipe which meets all Federal, State, County and City water specifications. Western has manufactured enameled pipe for more than seventeen years.

Enameled steel water pipe is but one of 300 different steel products fabricated by Western's five plants. The facilities of the company are unmatched in the West for handling tailor-made products or large volume production.



Laying 33-foot section of 126-inch enameled pipe on Los Angeles Metropolitan Water District Project.



Pipe coming off the processing line where coal tar enamel is applied under high temperature.

For nearly 40 years, Western Pipe & Steel has taken the lead in pioneering methods for improving the quality of steel fabricated products. For information concerning the company's products and engineering services, call any Western Pipe & Steel office.

WESTERN PIPE & STEEL COMPANY of CALIFORNIA

FABRICATORS • ERECTORS

P. O. Box 2015—Terminal Annex
5717 Santa Fe Ave., Los Angeles 54

Bakersfield, Fresno, South San Francisco, Taft, Calif.; Phoenix, Ariz.



200 Bush Street
San Francisco 6



FILE C-312

The Case of the Complaining Office Staff

... It Happened in Denver!

PROBLEM: Cylinder transcribers at the Graybar Electric Company, Denver, repeatedly complained that noise from machines in the general office fatigued and distracted them so much that they could not accurately transcribe dictation.

SOLUTION: Acousti-Celotex! Management called in the local distributor, member of the only sound conditioning organization in the world experienced in over 100,000 acoustical installations. He diagnosed the problem—installed Acousti-Celotex.

RESULT: An immediate *decrease* in noise—an *increase* in efficiency. Workers got more done in less time with fewer mistakes. Results were so pleasing and so demonstrable that management installed Acousti-Celotex in private offices, catalog room and display room.

MORAL: Acousti-Celotex* sound conditioning pays. Installations in offices and factories prove this. Consult your local Acousti-Celotex distributor today! His advice is yours with-

out obligation, and he guarantees results. A letter or phone call will bring him to your desk.

Distributors of Acousti-Celotex in the West

ASBESTOS SUPPLY COMPANIES

SEATTLE • TACOMA • PORTLAND • SPOKANE • MISSOULA

JAY GREAR CORPORATION

ALBUQUERQUE • EL PASO

J. B. MATZ, SPECIALTY CONTRACTOR

PHOENIX

LAUREN BURT, INC.

FORMERLY ROCKY MOUNTAIN ACOUSTICAL CO.

DENVER • SALT LAKE CITY

THE HAROLD E. SHUGART CO.

LOS ANGELES

WESTERN ASBESTOS COMPANY

SAN FRANCISCO • OAKLAND • SACRAMENTO



Sound Conditioning with
ACOUSTI-CELOTEX

* Perforated Fibre Tile REG. U.S. PAT. OFF. SINCE 1923

Wire ahead

No matter how good a man is, he can't work *ahead* of his machine. And all too frequently overtaxed, over extended, obsolete wiring chokes off low-cost electricity from an efficient operator.

Is your plant safe against this threat to production and morale?

Why not check with your plant power engineer, your consulting engineer, electrical contractor or power salesman? It may save costly shut-downs and expensive alterations later.

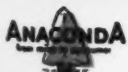
Today, more than ever before, full production depends on adequate wiring.

46318

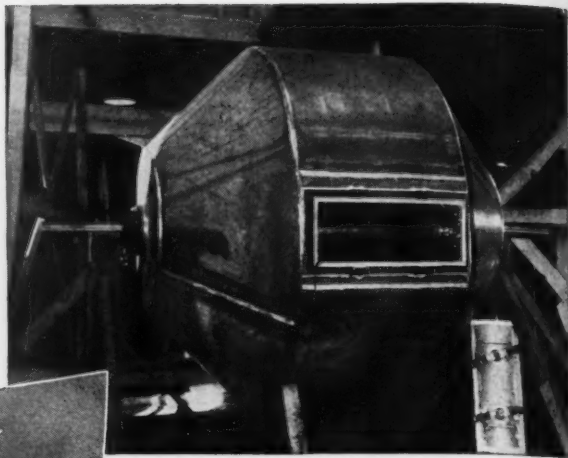
FOR FULL PRODUCTION



THEY ALL PUNCH IN...
but inadequate wiring can
knock out 30 to 50 per cent



ANACONDA WIRE & CABLE COMPANY



**FOR WORKABLE
SHEET MATERIALS
...SEE REVERE**

THESE pictures show plant equipment in special shapes and large sizes, fabricated of Revere sheet copper and sheet Herculoy by the Camden Copper Works, Camden, N. J. They illustrate the amazing versatility of these metals, which skilled coppersmiths the country over fabricate into practically any desired shapes from the flat.

Easy workability of course means faster and more accurate fabrication of apparatus for your plant. It may also mean lower prices from the fabricator, or lower labor costs in your own plant if you make your own equipment. Whether the final form be simple or complicated, the workability of copper and its alloys is a tremendous advantage.

More than this, copper's high heat conductivity may speed up processing, and cut fuel expense.

Copper resists attack by many substances, and thus has a long, sometimes endless life. Often

copper pipes and vessels are replaced only because of a change in the plant; then the metal has a high reclaim value.

The Revere Technical Advisory Service will gladly cooperate with you in working out applications of copper, whether plate, sheet, strip or roll, or in other mill forms such as pipe and tube, rod and bar, and extruded shapes. Write Revere or see your Revere Distributor.

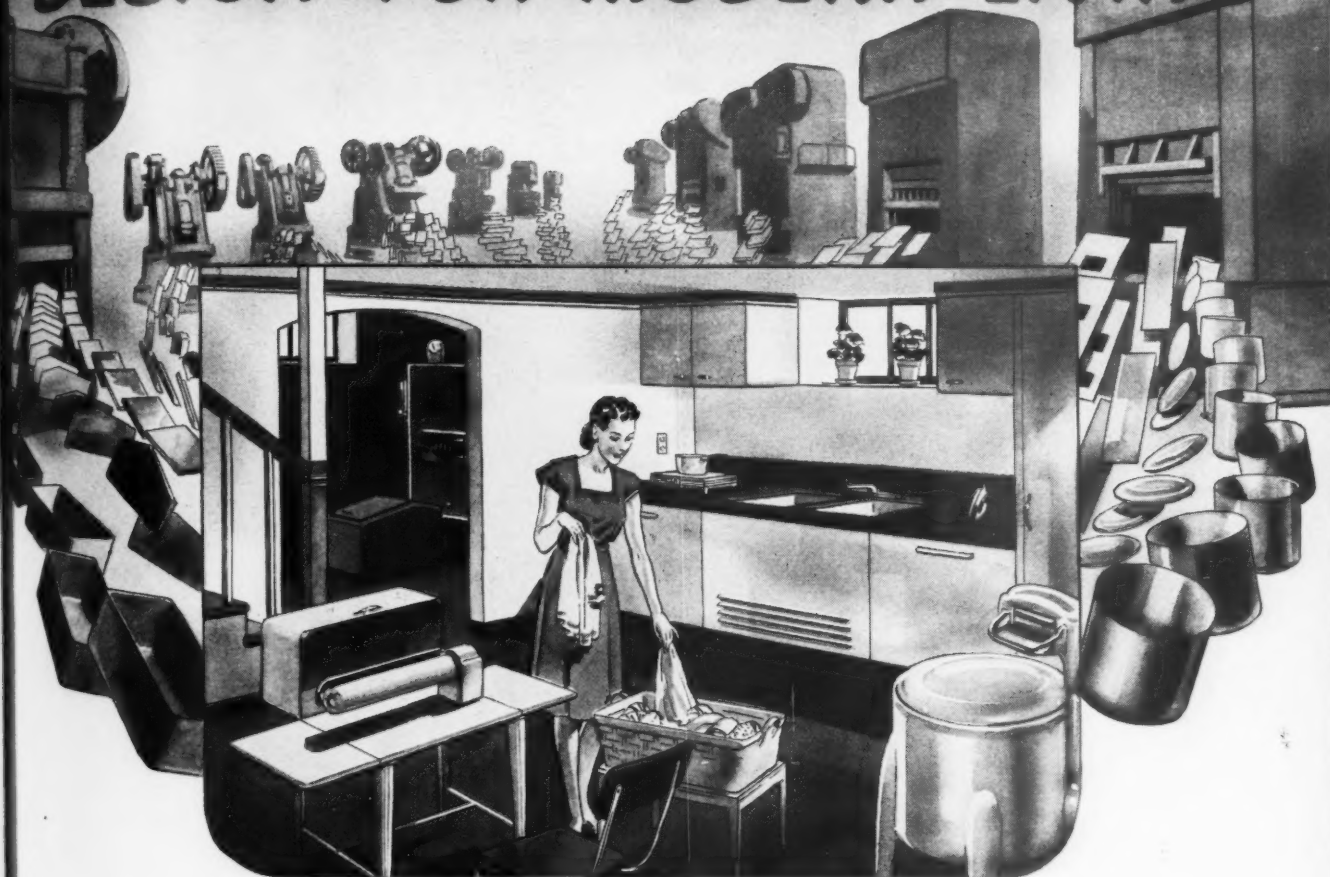
REVERE
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; New Bedford, Mass.; Rome, N. Y. — Sales Offices in Principal Cities, Distributors Everywhere. Pacific Coast District Sales Offices in San Francisco, Seattle, Los Angeles

DESIGN FOR MODERN LIVING

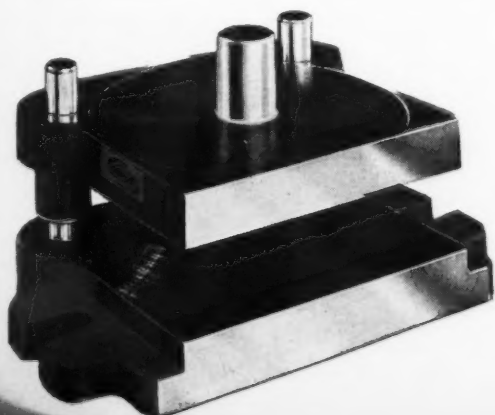


in Press Production Today

Designed for press production, the stamped products reaching the American Home—the new washing machine, electric ironer, stoker and metal cabinets—create a new design for living. The once messy basement becomes a modern, pleasant workroom.

Wherever stamped products are being turned out, Danly Die Sets and Die Makers' Supplies guarantee precision, speed die making programs and cut "down time," because Danly means *known dependable accuracy*.

DANLY MACHINE SPECIALTIES, INC.
2100 South 52nd Avenue • Chicago 50, Illinois

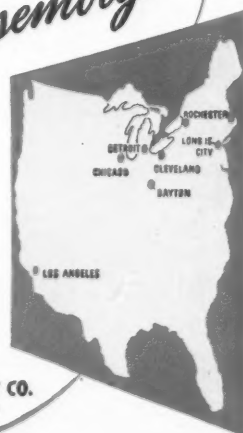


DANLY

National Assembly

Call Danly

- **MILWAUKEE 2**
111 East Wisconsin
- **DETROIT 16**
1549 Temple Avenue
- **CLEVELAND 14**
1550 East 33rd Street
- **DAYTON 2**
990 East Monument
- **ROCHESTER 4**
16 Commercial Street
- **PHILADELPHIA 40**
3858 Pulaski Avenue
- **LONG ISLAND CITY 1**
47-28 37th Street
- **DUCOMMUN METALS & SUPPLY CO.**
4890 South Alameda, Los Angeles



DIE MAKERS' SUPPLIES
DANLY DIE SETS
Welded Steel Fabrication

CONCENTRATION



Concentration kindles the
flame of success.

By bringing all light to bear
on the client's sales
problems,

By setting forth his message
in clear focus,

The McCarty Company con-
centrates the team work of
its entire staff to the de-
velopment of an energetic
advertising impact.

Thus, The McCarty Company
has shared in the success
of its clients for over
a quarter of a century.

The McCarty Company.

Advertising Counsellors

ESTABLISHED 1919.

LOS ANGELES ★ SAN FRANCISCO ★ SEATTLE ★ DALLAS ★ PITTSBURGH

**LARGEST REFRIGERATED
WAREHOUSE ON THE COAST**
Contains
185,000 FEET



Cooling banks of Ammonoduct Pipe. The returns shown were bent cold on 7-in. centers.

OF Ammonoduct

Located alongside San Francisco's old "China Basin" at Sixth and Channel Streets this 1,900,000-cu. ft. refrigerated warehouse is the largest on the Coast.

With eleven storage rooms ranging in temperatures from 0 to 36 deg. F. and one quick-freeze room held at from -25 to -30 deg. F., this plant safely handles perishable foods for the Army Quartermaster Corps.

The brine-circulating system consists of 185,000 feet of Bethlehem Ammonoduct pipe. The major portion of this piping is in the cooling banks—2-in. pipe set on 7-in. centers. Larger sizes are used for feeders and cross runs.

Ammonoduct is continuous-weld pipe made of a special quality low-carbon open-hearth steel. It has unusually high ductility and can be bent cold on a relatively short radius without danger of wall

fracture. It welds readily and requires no annealing. For refrigeration use, Ammonoduct is air-tested under water to 300 lbs. per sq. in.

Ammonoduct costs no more than regular pipe. It is available in sizes from ½-in. to 3-in., in uniform 21-ft. lengths, plus or minus 1-in. For further information write or phone the nearest Bethlehem Pacific office.

BETHLEHEM PACIFIC COAST STEEL CORPORATION

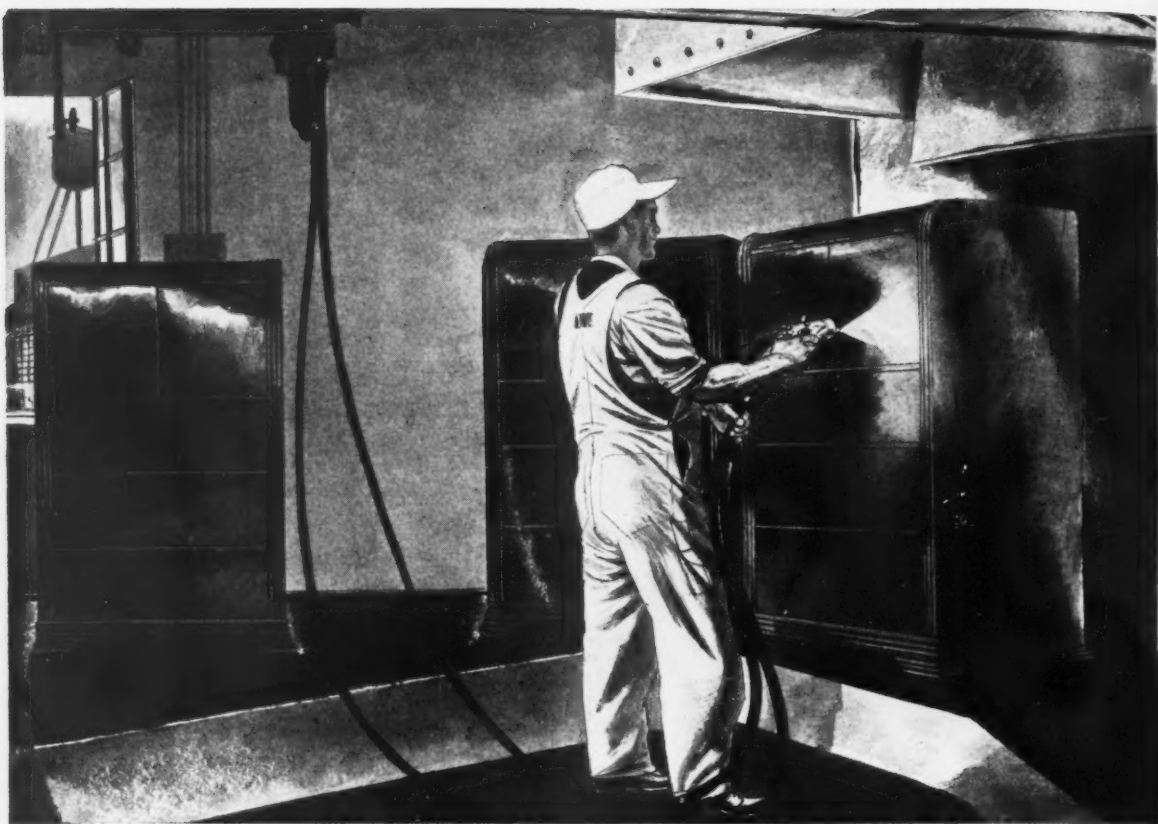
General Offices: San Francisco

District Offices: Los Angeles, Portland, Seattle, Salt Lake City, Honolulu

Steel Plants: Seattle, South San Francisco, Los Angeles

BETHLEHEM PACIFIC





$$P^c + S^a + O^s = P^3 \times R^o$$

A FORMULA OUR CHEMISTS CONSTANTLY CONSIDER

It's a basic formula! Production costs, *plus* sales appeal, *plus* owner satisfaction *equal* profit three ways (for manufacturer, jobber and retailer), *times* the repeat orders that keep sound merchandise moving.

Our technicians consider the whole formula. When they tailor-make a finish for the furniture industry, for instance, they keep that industry's



"We never have to fight a Fuller Finish"

"That means no production lag," continued the finishing foreman. "You make it right. It sprays right, dries right and gives the mileage. That's what keeps the front office happy!"

production costs in mind, yet give them that product attractiveness and durability that keep sales departments proud.

Before we create a finish we determine its purpose, and the service it is expected to give—whether it's a production finish for wood, plastic or metal products, or surface protection for ships, machines, aircraft, buildings, homes or a farmer's fence posts.

True, we're the West's oldest paint and lacquer manufacturers. And we're still pioneers at heart—still challenging ourselves on every hand to make still better paint products to give still better service. W. P. Fuller & Co. Factories, San Francisco, Los Angeles, Portland. Branches and warehouses in principal Western cities.

FULLER *Industrial* FINISHES



AIRCRAFT FINISHES

War-proved Fuller Aircraft Finishes outstanding for hard service. Now they're available for private plane owners. See your Airport Refinisher.

MAINTENANCE FINISHES

Fuller Color Engineering makes color *work in your plant* to decrease accidents, direct traffic, increase efficiency. Free illustrated book upon request.

MARINE FINISHES

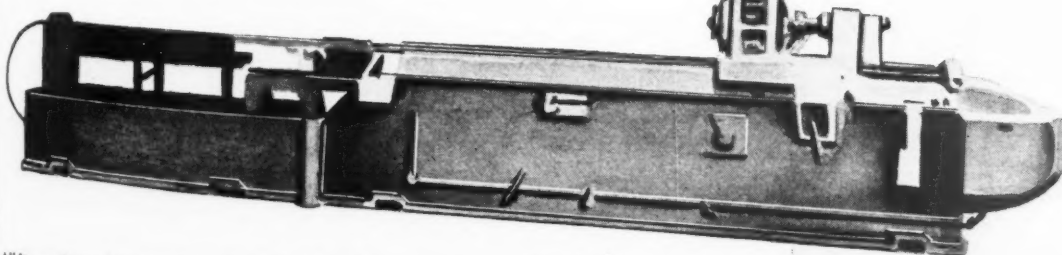
Fuller Marine Finishes mean lower maintenance costs, less frequent tie-ups for repainting. Stem-to-stern protection—underwater, atmospheric.

Finishing MACHINES

Undoubtedly one of the major opportunities of today, lies in the many thousand fine tools of modern production now idle. Here at your finger tips is a choice of the world's best machine tools—the tools that won the battle of production. Now they can be purchased, at prices far below original cost. Simply tell your nearest War Assets Administration Regional Office the kind and type of machine you need, or check and mail the coupon at right. (You'll find a portion of the available equipment listed on this and the following three pages.) Remember that whenever you purchase surplus property you are not only creating new opportunities for your own business, but also helping to stabilize U. S. Post War Economy.

SPECIAL BUYS IN FINISHING TOOLS

KEY	MACHINE & TYPE	SIZE OR CAPACITY
1	Honing, internal, horizontal type	Under 6" Bore
2	Lapping, flat surface	24" diam. lap plate
3	Lapping, gear tooth, external	
4	Lapping, gear tooth, external and internal	
5	Honing, internal, vertical	



All items shown here and on the following three pages are offered subject to prior sale. This surplus property has previously been advertised and offered to prior claimants including Veterans of World War II.

MAIL TODAY*

To War Assets Administration:

Please send me information on the types of Finishing Tools checked below:

Name.....Tel. No.....

Firm.....

Address.....

City.....State.....

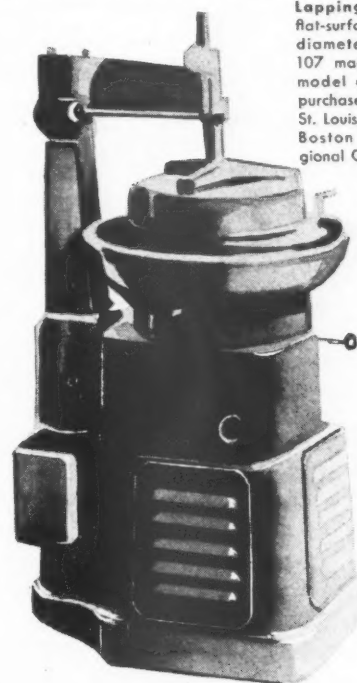
*For War Assets Administration address, see 4th page of this advertisement.

CHECK LIST

(These key numbers correspond to the machines listed as Special Buys! Simply check those in which you are interested.)

- 3.....
- 1..... 4.....
- 2..... 5.....

277-6



Lapping Machines, flat-surface type 24" diameter lap plate. 107 machines, of this model are awaiting purchase at the Detroit, St. Louis, Chicago and Boston W.A.A. Regional Offices.

Honing Machine, internal type, horizontal design. Size of bore, under 6". 175 machines similar to this one are located at warehouses in Detroit, Cleveland, Chicago and Philadelphia. Many other types also in stock are in other W.A.A. Offices.

MODERN TOOLS

Speed Production

AVAILABLE Now FROM GOVERNMENT-OWNED SURPLUS

American Industry is faced by its greatest production problem—that of supplying many millions of people all over the world with all the long-awaited items of comfortable peacetime living. In its prompt solution lies an important profit opportunity for individual industries.

War Assets Administration is helping to meet this problem. We are making available to industry and business billions of dollars worth of government-owned war surpluses.

By means of this 4-page advertisement, War Assets

Administration is telling as large a portion of industry as possible, what kinds and quantities of machine tools are available. If you are interested, other buying information will be made available quickly. Look over the listing at right carefully. Decide which of these basic tools will help you solve immediate production problems. Then clip and mail the coupon to the nearest W.A.A. office listed at the bottom of the next page. Or if you prefer—phone your Regional Office today, and arrange a visit to inspect the equipment you want to buy.

EXPEDITING COUPON

**Free Information
Check and Mail Today!**

To War Assets Administration*:

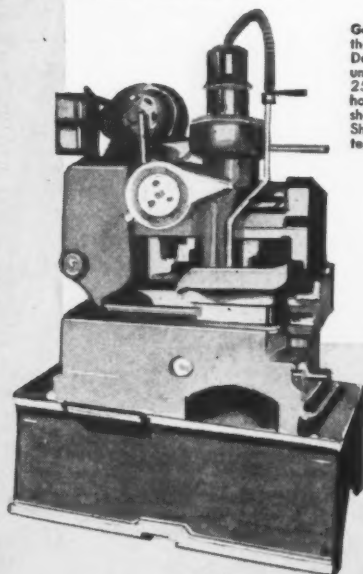
Please send me specifications, prices and other information on the items listed at right!

(To save writing simply use the key numbers shown in the left hand column of the list on opposite page.)

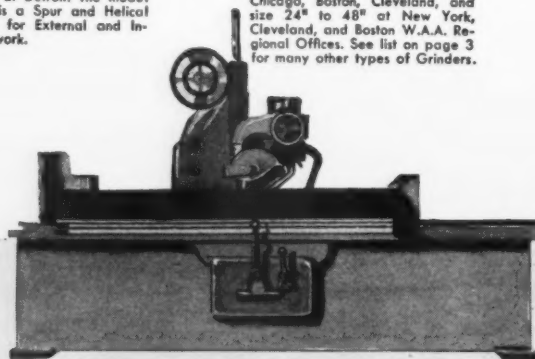
Name.....
Firm.....Tel. No.....
Address.....
City.....State.....

*For WAA addresses see 4th page of this advertisement.

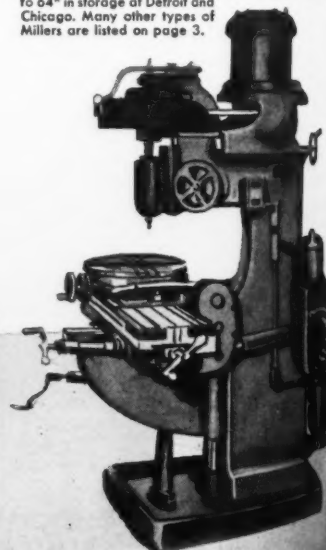
277-6



Gear Shapers are available in the W.A.A. Regional Offices at Detroit and New York in sizes under 12". Sizes from 12" to 25" in diameter are warehoused at Detroit. The model shown is a Spur and Helical Shaper for External and Internal work.



Surface Grinders. This is a reciprocating type, horizontal, split-power feed grinder. Large quantities of many sizes are available at Detroit Regional Office. Size 18" to 24" at Chicago, Boston, Cleveland, and size 24" to 48" at New York, Cleveland, and Boston W.A.A. Regional Offices. See list on page 3 for many other types of Grinders.



Standard Miller, typical of a large number of vertical spindle types. You'll find 281 with table travel under 12" at Cleveland and Detroit offices, and 147 of size 6" to 64" in storage at Detroit and Chicago. Many other types of Millers are listed on page 3.

Here are a few of the many hundreds of machine tools available to you through War Assets Administration.

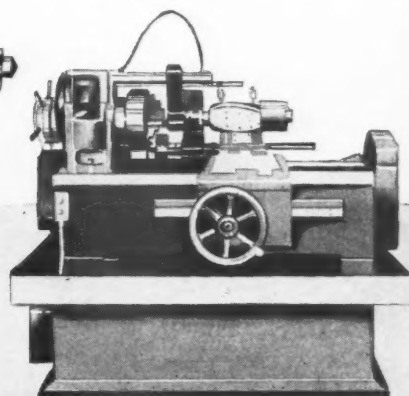
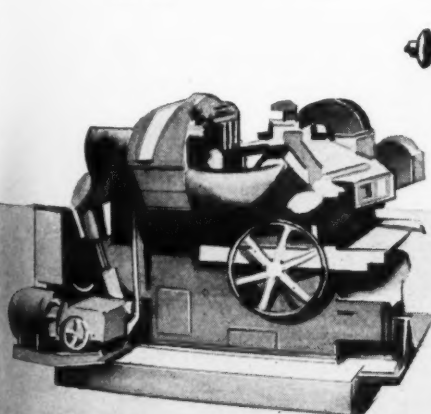
KEY	MACHINE	TYPE	SIZE OR CAPACITY
1	Goring, Drilling & Milling	Horizontal	Up to 6"
2	Boring & Turning Mills	Vertical	24" to 120" Swing
3	Boring & Turning Fixed Rail Mills	Vertical	
4	Precision Boring Machine	Horiz. bridge—single end	Under 8" to 14"
5		Horiz. bridge—double end	Under 8" to 14"
6	Drills	Sensitive Bench Box Column single spindle	Under 1/2" Cap. Up to 22" Swing 1/2" to 1" Cap. 16" to 24" Swing
7			
8		Sensitive Bench Round Column—Single spindle	Under 1/2" Cap. Up to 22" Swing 1/2" to 1" Cap. 16" to 24" Swing
9			
10		Sensitive Floor Box Column—1 to 6 spindle	Under 1/2" Cap. 12" to 22" Swing 1/2" to 1" Cap. 16" to Over 24" Swing
11			
12			1" Cap. and over 24" Swing & over
13		Sensitive Floor Round Column 1 to 6 spindle	Under 1/2" Cap. 12" to 22" Swing 1/2" to 1" Cap. Under 16" to 42" Swing
14			
15		Sensitive Floor Upright Type—Box Col. 1 to 6 spindle	Up to 28" Swing
16		Sensitive Floor Upright Type—Round Col. 1 to 6 spindle	Up to 28" Swing
17		Heavy Mfg. Type	Up to 32" Swing
18		Spec. Kingsbury Way Vertical	
19	Multi-Tool	Heavy Duty Mfg. & Production (Not automatic)	Up to 20" Swing
20	Lathe	Single Spindle—Horiz. Platen Type	
21		Single Spindle—Horiz. Turret Type	
22		Multi Spindle—Horiz. (4-5-6 & 8 spindle)	
23		Multi Spindle—Vertical (6 and 8 spindle)	
24		Auto. Between Centers Horiz. Single Spindle	All sizes
25	Screw Machine	Auto—Bar—Single Spindle	Up to 1 1/2" Cap.
		Auto—Bar—5 Spindles	All sizes
26		Auto—Bar—8 Spindles	1 1/2" and Over Cap.

KEY	MACHINE	TYPE	SIZE OR CAPACITY
27	Miller	Horiz.—Plain—Hand Feed	10" and Over Table Travel
28		Horiz.—Plain—Knee Type	All sizes
29		Vertical—with Sliding Swivel Universal Heads	All sizes
30		Automatic	All sizes
31		Bed Type—Plain—Horiz. Spindle	All sizes
32		Vertical Spindle—Std.	All sizes
33		Vertical Fixed Bed Profiler (1 & 2 Spindle)	
34		Thread—Universal—Not Automatic	12" and over Work Diam.
35		Thread—Universal—Auto.	Up to 20" Cap.
36		Thread—Auto.—Chucking	
37		Planetary	6" to Over 10" Work Diam.
38		Spline	
39	Engravers	Pantagraph—2 Dimensions	
40	Polishers & Buffers	Floor Type	1/2 to 10 H.P.
41	Lathe	Speed Type	Up to 3 H.P.
42	Saws	Circular Cut-Off	
43	Lathes	Cut-Off	Under 1" Bore
44	Abrasive Machine	Belt Drum & Disc	
45	Abrasive Cut-Off		
46	Tapping	Vertical—1 & 2 Spindle	
47		Horizontal—1 Spindle	
48	Die Threading	Bolt Rotary—1 Spindle	
49	Centering	Double End—Horizontal	
50	Pointing, Chamfering & Burring		
51	Shaver	(Not Gear)	
52	Reamer	(Not Rifle)	
53	Drawing Machine		100,000# and over
54	Machinery & Equipment Allied to Primary Metal Forming Machine & Equipment		
55		Pickling	All sizes
56		Horizontal	4" to 16" Cap.
57		Vertical—Universal	Under 16" Diam.
58	Flame Cutting Machine		
59	Hardness Tester	Brinell—Portable & Power Rockwell—Manual & Power	
60	Inspection Machine	Magnetic (Magnaflux)	
61	Balancing Machine	Static	
62		Dynamic	
63	Grinder	External Cylindrical—Plain	Up to 20" Swing

Gear Cutter Bevel. Straight tooth generators (12" shown) are now available at Detroit, New York and Philadelphia. Other sizes may be located at W.A.A. Regional Offices in Detroit, Chicago and New York.

Polishing and Buffing Machines. The heavy duty floor type shown is available in large quantities. There are 657 machines from 1/2 to 1 H.P. in Cleveland and Detroit; 100 machines 1 to 3 H.P. in Cleveland and Detroit; 90 machines 3 to 5 H.P. in Detroit and Boston, and 633 machines, 5 to 10 H.P. or above in Detroit, Cleveland, Chicago and Boston.

Universal Thread Miller. This automatic thread miller is one of the many types and sizes now available for purchase at W.A.A. Regional Offices in Detroit, Boston, Chicago, Cleveland. Check list above for detailed information on other types of milling tools.



FREE INFORMATION

To War Assets Administration:

Without obligation please send me detailed information on the following machine tools:

.....

.....

(Write in any type of machine tool you need.)

Name.....Tel. No.....

Firm.....

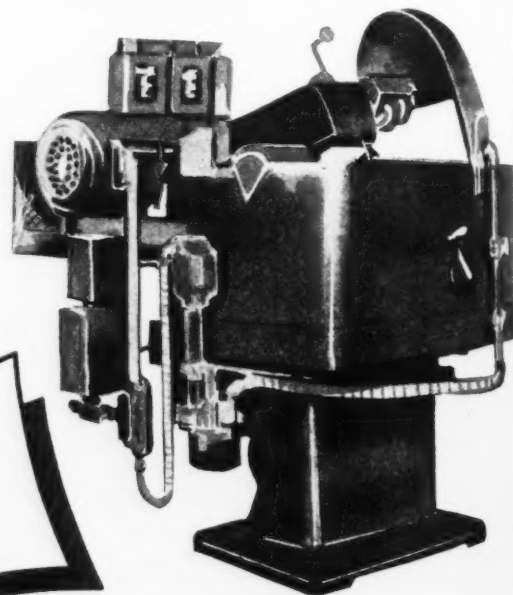
Address.....

City.....State.....

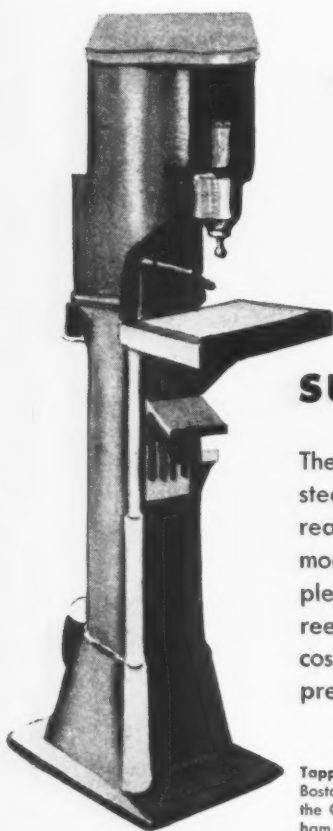
277-6

ABRASIVE CUT-OFFS

Abrasive Cut-off Machine. For this and all other machine tools shown in these four pages, simply contact your nearest W.A.A. Regional Office listed below. Each of these offices can give you information about present inventories of machine tools . . . or better yet mail the coupon at left. 112 abrasive cut-off machines are available now and more will be declared surplus.



VETERANS OF WORLD WAR II
—to help you in purchasing surplus property, Veterans' units have been established in each War Assets Administration Regional Office.



GOVERNMENT-OWNED SURPLUS PRODUCTION EQUIPMENT

The machine tools shown on this and the preceding three pages, produced a steady flow of equipment during the war. Now that their job is done they are ready for application to civilian production needs. Huge quantities of all models and types are available—so many that they simply couldn't be completely listed on these few pages. For you these machines spell opportunity to reequip your plant for postwar markets quickly and at low cost. Certainly it costs little to investigate. Simply circle the item or items listed on this and preceding pages—clip out the coupons and mail today.

TAPPING MACHINES

Tapping Machines. Over 400 of the one spindle, vertical type are waiting for purchase in Detroit, Chicago, Boston and Philadelphia warehouses. Two spindle models, (not shown) may be inspected at warehouses of either the Cleveland or Boston W.A.A. Regional Offices. 259 horizontal one spindle machines are being sold at Birmingham, Detroit, Cleveland, Chicago, and Philadelphia Regional Offices.

WAR ASSETS ADMINISTRATION

Offices located at: Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati • Cleveland • Dallas
Denver • Detroit • Fort Worth • Helena • Houston • Jacksonville • Kansas City, Mo. • Little Rock • Los Angeles
Louisville • Minneapolis • Nashville • New Orleans • New York • Oklahoma City • Omaha • Philadelphia
Portland, Ore. • Richmond • St. Louis • Salt Lake City • San Antonio • San Francisco • Seattle • Spokane

Now Becomes



Security

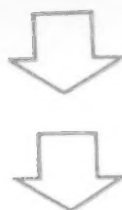


**CAST STEEL
FORGED STEEL**

*Valves
& Fittings*

for

**OIL FIELD
PIPE LINE
REFINERY
INDUSTRIAL
CHEMICAL
MARINE Installation**



and the new Company will be known as the



Pacific Company

Plant and Warehouse . . . 3305 E. Slauson Ave., Los Angeles, Cal.

District Offices in

SAN FRANCISCO . . . HOUSTON . . . CHICAGO . . . ODESSA . . . NEW YORK

In order to more satisfactorily serve their many customers in all domestic and Foreign fields, KEROTEST MANUFACTURING COMPANY of Pittsburgh, Pennsylvania, has purchased all of the present stocks, designs and goodwill of the . . .

**SECURITY VALVE DIVISION
of the Security Engineering Co., Inc.
WHITTIER, CALIFORNIA**

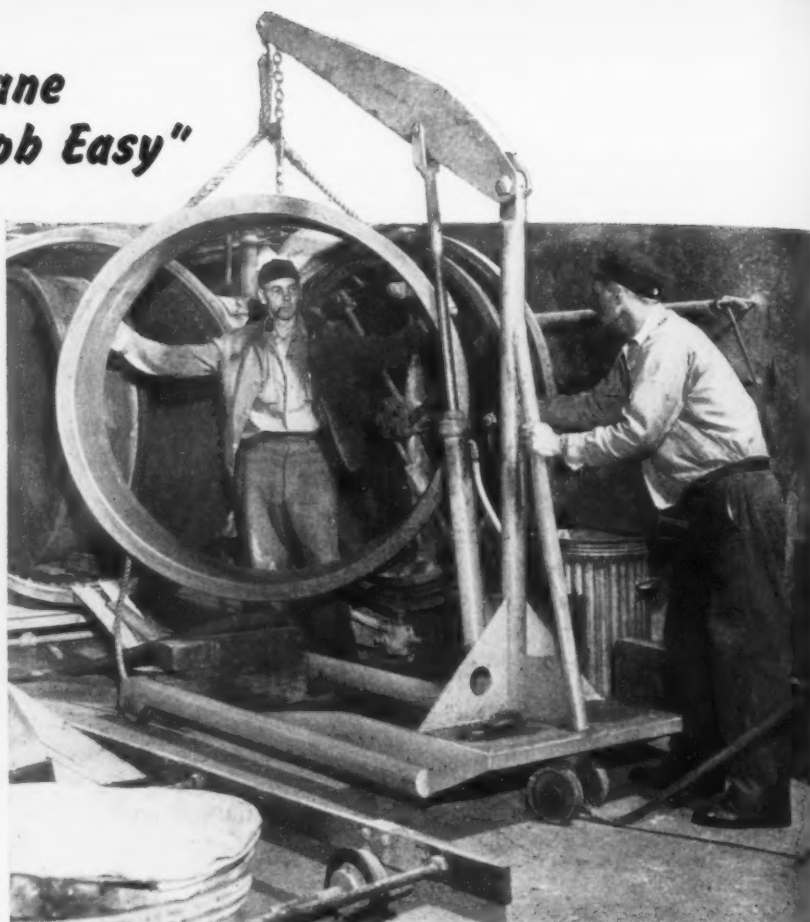
A completely new, modernly-equipped plant for the precision manufacture of cast and forged steel valves and fittings is now being built in Los Angeles, California.

These new manufacturing and warehousing facilities will provide both KEROTEST and SECURITY customers with faster service and a single dependable source of supply for every valve and fitting requirement. Your inquiries are invited.

"Our Ruger Crane Makes This Job Easy"



ROBERT JONES, shop superintendent of Huntington Rubber Mills, Portland, Oregon, finds the Ruger hydraulic floor crane the "Handiest" piece of handling equipment ever purchased by his plant.



THE RUGER HYDRAULIC FLOOR CRANE Solves Another Difficult Handling Problem

"Here's a tough gruelling job which formerly required four men and considerable time. The 500 pound metal ring comes from the retort with a lining of hot rubber. It's hard to handle and requires care to prevent injury to the rubber lining. Today our Ruger Crane and one man can lift and man these rings quickly, easily and safely. We save labor, time, and accidents and have reduced the cost of the job considerably. This is only one of many jobs which our Ruger Crane is now handling in our shop."

- ★ Three time tested models—
One, Two and Three Tons
- ★ Extension beam for extra high lifts and "duck-in" jobs.
- ★ Hydraulic Power — Safe, Sure and Easily Controlled
- ★ Roller bearing wheels. Spots loads anywhere in shop.
- ★ Rolls easily under trucks and machines.

RUGER EQUIPMENT CO.

P. O. Box 3821, Portland 8, Oregon

Please send me your folder with complete details and prices on Ruger cranes.

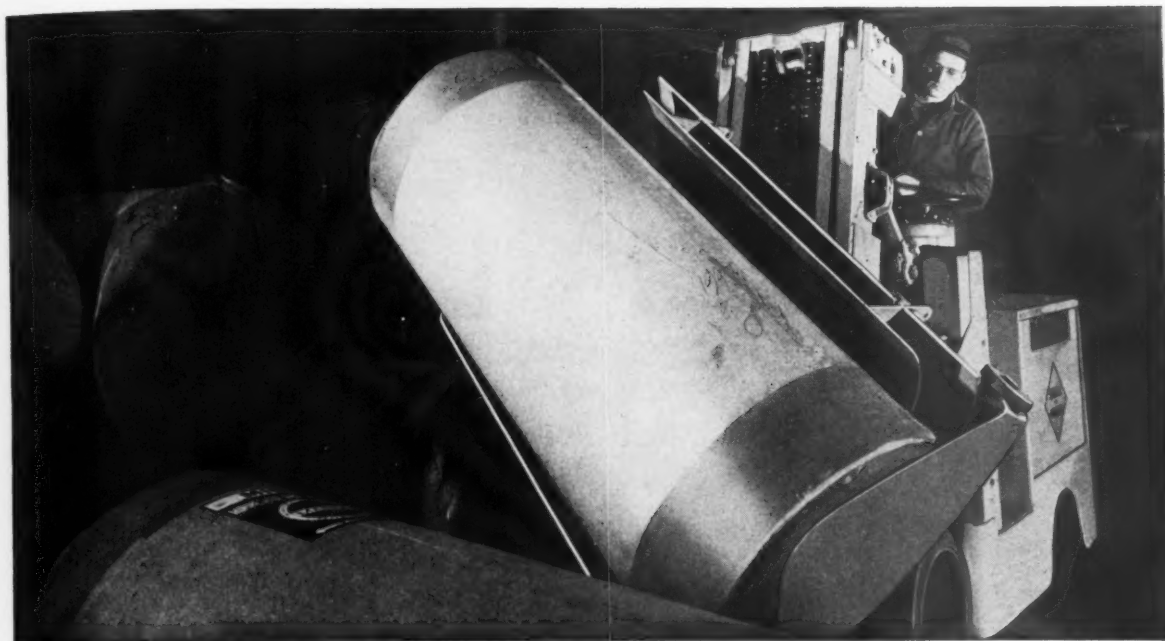
Name.....

Address.....

City..... State.....

RUGER EQUIPMENT COMPANY

How a "turn-around" idea turned a whole Industry around



Elwell-Parker's Western Sales Engineers are Prepared to Apply *Industrial LOGISTICS** to Lowering Your Selling Costs, too

Until Elwell-Parker developed the first Truck attachment for manipulating newsprint, mills and publishers alike were limited to rolls of narrow widths and small diameters, to permit manual handling. At that, accidents were common and transportation costs away high.

Spurred by the need, Elwell-Parker Engineers developed an "apron" attachment that soon became standard throughout the Industry. Not only does it handle rolls of 40% greater diameter, but lifts them from either vertical or horizontal, rotates 90° to opposite position and high-tiers in warehouse or boxcar.

Mill owners, newspaper publishers, commercial printers, now handle full-width rolls of required diameters on these Elwell-Parker Trucks. Accidents have been eliminated, operations speeded, costs sharply reduced.

Apply Industrial Logistics in *your* quest for lowered

selling costs. Elwell-Parker's Western Sales Engineers will aid in developing modern methods of handling your materials—using standard Elwell-Parker Trucks with attachments correctly engineered to your job.

The Elwell-Parker Electric Company, 4175 St. Clair Avenue, Cleveland 14, Ohio.

For California:
IRA G. PERIN
575 Howard Street • San Francisco 5
Telephone GArdfield 1827
1612 Maple Avenue • Los Angeles 15
Telephone PRespect 5911

For Oregon and Washington:
COLBY STEEL & ENGINEERING CO.
525 Central Building • Seattle 4
Telephone ELliott 5722

*The science of assembling and handling materials to insure maximum economies at every stage of (a) Procurement, (b) Production and (c) Distribution, using Elwell-Parker Electric Trucks, Tractors and Cranes;

Employing the correct containers (Boxes, Barrels, Bags or Bales) in Master Unit Loads, on Pallets or Skids;

To Insure Greater Speed—Faster Production—Greater Turnover—Increased Safety—New Profits.

ELWELL-PARKER

POWER INDUSTRIAL TRUCKS

Established 1893





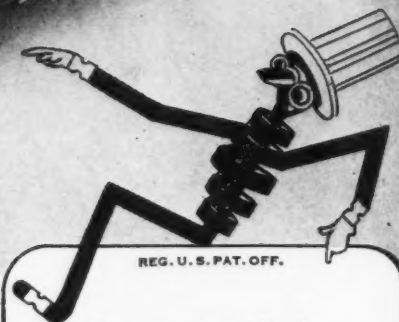
THAT'S ACME *Uni-Pak...*

The modern method of shipping and handling a group of packages, semi-finished parts, or finished products . . . made possible by Acme Steelstrap.

Alone or in combination with a skid or pallet, Acme Steelstrap converts individual packages into one unit.

Note the photo above. Twelve brake drums per crate all secured with Acme Steelstrap. In short, one package doing the work of a dozen, and "bound to get there."

Enjoy important savings in time and handling costs, plus hearty "thanks" from the customer end of your shipping line . . . Use Acme Uni-Pak for handling and shipping your products.



Acme Uni-Pak Loads 10 Tons More in Single Car

A shipper of cable reels said . . . "we kept close tab on one of our carload shipments using Acme Uni-Pak. We netted a total savings in dollars and cents of \$81.64 over old methods . . . plus, 20,000 pounds additional cargo loaded in the car . . ."

LOS ANGELES 11

SAN FRANCISCO 7

SEATTLE 4

PORTLAND 9

ACME STEEL COMPANY

ACME STEEL CO.
CHICAGO

There are Six **HIDDEN HANDS** in this Picture

Thor

PNEUMATIC
ASSEMBLY TOOLS

*Drive Screws, Set Nuts, Three Times Faster
Than Hand Tools*

The picture shows this girl's two hands operating a Thor 217 Pneumatic Screwdriver.

But, if you could *watch the job* you would see in the speed with which this girl completes assemblies a ratio of "six hidden hands" inside that Thor tool which help her assemble *faster . . . surer* than any three operators using hand tools.

NO HUMAN HAND can approach the unfailing accuracy, precision and speed with which Thor pneumatic assembly tools drive screws and nuts. On most models, an *adjustable* clutch, invented and perfected by Thor, controls precisely the tightening of the fastener to the exact tension required. No guesswork, no "feeling your way"—each screw or nut is *right* every time.

And you get *safe speed*—for, while Thor screw and nut drivers are amazingly fast and powerful, automatic governors and precision gears adapt torque and speed to the tool application at hand.

If you have assemblies you want to speed up with Thor's "six hidden hands" don't hesitate—write or call your nearest Thor branch today.



INDEPENDENT PNEUMATIC TOOL COMPANY

600 W. Jackson Boulevard, Chicago 6, Illinois

BIRMINGHAM	BOSTON	BUFFALO	CLEVELAND	DETROIT	LOS ANGELES
MILWAUKEE	NEW YORK	PHILADELPHIA	PITTSBURGH	ST. LOUIS	SALT LAKE CITY
SAN FRANCISCO		TORONTO, CANADA		LONDON, ENGLAND	

Thor

PORTABLE POWER

TOOLS

PNEUMATIC TOOLS • UNIVERSAL AND HIGH FREQUENCY ELECTRIC TOOLS • MINING AND CONTRACTORS TOOLS

*Here's the Roof that Really
Keeps the Weather Out!*

PLASTEEL



Protection against the weather is important. But that's not all. Weather-tested Plasteel is fortified against all corrosive influences—the extremes of heat, cold, moisture; of gases, acid fumes, mineral dusts, salt air and other atmospheric conditions. Plasteel is scientifically processed for permanent qualities. It takes STEEL sheets for basic strength; hermetically seals them in weather-tight plastic for resistance to corrosion; and then for further insulation and durability, adds a protective finish of pure mineral mica that needs no paint, no repairs. A combination that really gives extra protection! It not only keeps the weather out but eliminates deterioration and higher maintenance costs. That's why experienced engineers, architects and maintenance operators prefer *Plasteel Roofing and Siding*.

Let us send samples and details. Write Today.

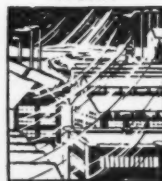
PLASTEEL Defies:



HEAT



MOISTURE



COLD



ACID FUMES



PROTECTED STEEL PRODUCTS

General Office and Plant

Washington, Pennsylvania

Your Bulk Material Can Be Economically Elevated By One Of These Units

• Link-Belt engineers have had extensive experience in the design, manufacture and application of bucket elevators for varied service requirements. If your conditions call for the use of a bucket elevator, let Link-Belt show you the most efficiently performing size and type for your needs. Refer to Link-Belt catalogs for complete engineering data, specifications and information on how to select bucket elevators.

LINK-BELT COMPANY

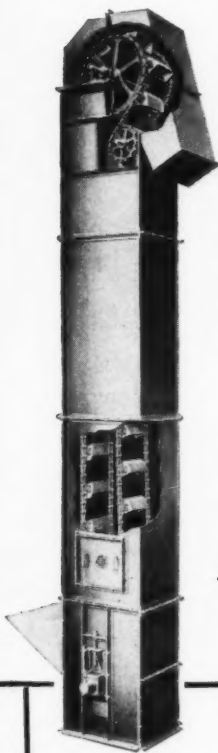
PACIFIC DIVISION

Plants at San Francisco 24, Los Angeles 33, Seattle 4. Offices and Warehouses: Portland 9, Spokane 8, Oakland 7.



The Rotor Lift

is a Helicoid (screw) elevator which handles many products that normally can be conveyed by a horizontal screw conveyor. It consists of a vertical screw driven from either the top or bottom, operating in a solid or split casing. The material is fed to the vertical screw by screw feeder near the foot of the lift and is discharged at the top or head end.



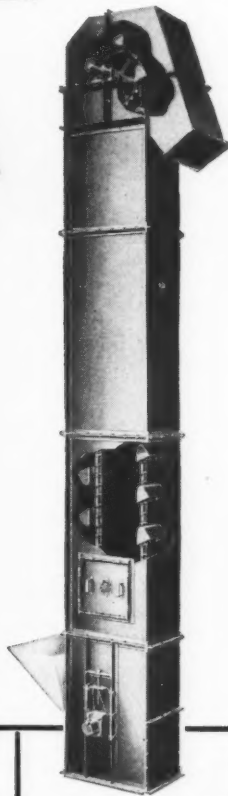
The Perfect Discharge Bucket Elevator

operates at slower speeds and is used where materials will not readily discharge at centrifugal speeds. Malleable iron or steel buckets are mounted between two strands of chain. Material is fed directly into buckets at the foot of the elevator or scooped up in the boot and discharged over a snubbed head wheel which inverts the position of the buckets over the discharge chute.



The Continuous Bucket Elevator

is used where higher capacity at slower speed is desired or where the material is friable. It consists usually of steel buckets mounted on either a chain or belt. Material is fed directly into the buckets at the foot of the elevator and discharged over a head wheel onto the preceding buckets, whose front and projecting sides form a chute, thereby directing the material into a fixed discharge spout.



The Centrifugal Discharge Bucket Elevator

is used for most products. It consists of either malleable iron or steel buckets mounted on either a chain or belt. The material is fed either directly into the buckets at the foot of the elevator or scooped up in the boot and is discharged over the head wheel by centrifugal action.



The Bulk-Flo

is used where mass conveying is possible. It consists of malleable iron or steel flights attached to a chain. The material is fed directly into the lower horizontal portion of the casing, thereby eliminating a feeder and is discharged at the opening in the upper portion of the casing, just before the flights reach the head wheel.



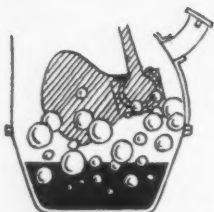
10,299-P

LINK-BELT
ELEVATORS

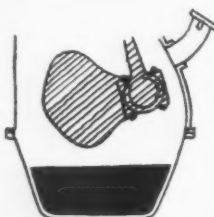


NO BUBBLES...

IN ENGINES BATHED IN RICHFIELD TENOL 800



Ordinary motor oils foam in the crankcase as illustrated. These bubbles cannot lubricate the danger points in your engine properly.



Richfield Tenol 800, with foam inhibitor resists foaming, provides complete lubrication at every danger point.

You can't lubricate an engine properly with the frothy emulsion of ordinary motor oils. That's why Richfield Tenol 800 contains a foam inhibitor. This remarkable compound actually breaks the bubbles (formed by the churning action of the engine) and allows rapid dissipation of any air whipped into the oil. This anti-foam compound is your assurance that every vital, moving engine part is completely lubricated when you use 'Bubble Free' Tenol 800. Tenol also embodies new compounds that clean up dirty engines, resist corrosion and sludge formation and cut down needless engine wear.

Tenol 800 is recommended for use in all automotive type engines in trucks, tractors and busses: Diesel engines, high speed or low speed: natural and artificial gas engines and Butane and Propane type engines.

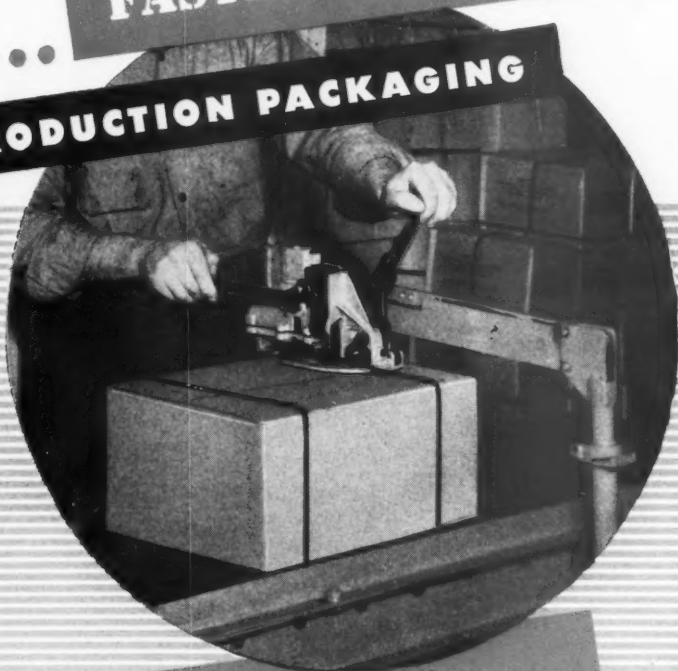
THERE IS A SCIENTIFIC RICHFIELD LUBRICANT FOR EVERY MACHINE IN EVERY TYPE OF SERVICE

RICHFIELD

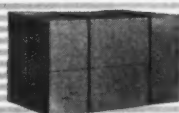
NOW...

FASTER STRAPPING

FOR PRODUCTION PACKAGING



SUITCASES IN
CARTONS



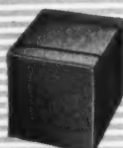
ELECTRIC BATTERIES



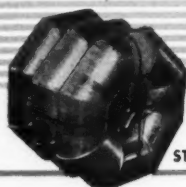
CHEWING GUM



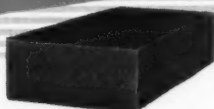
MEN'S CLOTHING



FOOD PRODUCTS



STOVE PIPE ELBOWS

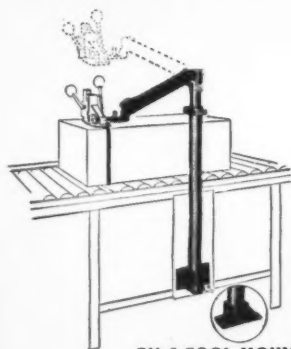


DRESSES



CARTONS OF BOOKS

with the new **SIGNODE A-2**
SEAL FEED STRAPPING MACHINE



TM-1 TOOL MOUNT

Counterbalanced arm swings strapping machine into correct working position easily and smoothly. After strapping is completed, the machine automatically rises free from the package as indicated.

Just ONE tool—but it tensions, cuts and seals—all in quick, easy, effortless motion. The A-2 is unequalled for fast, low-cost strapping applications—particularly on centralized or conveyor systems. It's sturdy, lightweight . . . and outstanding in speed, convenience and simplicity of operation. Uses are almost unlimited . . . the A-2 straps boxes, cartons, crates or packages in a wide range of sizes and weights for countless industries. Check its advantages in terms of your own shipping room.

Write today for complete details and demonstration.

A-2 now available for strap sizes: $\frac{3}{8}$ " x .015,
 $\frac{1}{2}$ " x .015, $\frac{3}{8}$ " x .020, $\frac{1}{2}$ " x .020.

SIGNODE STEEL STRAPPING CO.
2615 N. Western Ave., Chicago 47, Ill.
458 Bryant St., San Francisco 7, Calif.
441 Seaton St., Los Angeles 13, Calif.
1021 4th Avenue, Seattle 4, Wash.
907 N. W. Irving St., Portland 9, Ore.

SIGNODE
STEEL STRAPPING

Announcing

the new **RIGGID** No. 4P Geared Threader for 2½" to 4" pipe



New ease of handling
New smoother, easier
threading
New bother-free upkeep
New long life of
efficient service

★
*Quick-setting
mistake-proof
workholder*



Loop handles make new 4P
extra easy to put on pipe.



● Here's the new 2½" to 4" die stock you have been wanting. It's full of the work-saver advantages you expect of a **RIGGID** Pipe Tool.

Comfort-grip loop handles balance it easily — no slipping or tipping over. Easy to carry with one hand, easy to lift and put on pipe... **RIGGID** plate type workholder quickly sets to pipe size *before* you lift it, tightens on pipe with *one* screw — and no bushings to fool with or lose.

Easy upkeep, too — drive pinion shaft turns in oilless bronze bearing, never needs oil. Enclosed gear protects you, keeps out dirt. Drive pinion is solidly twin-anchored to face plate and gear housing; four sets of 5 high-speed steel chaser dies cut clean standard or tapered threads, drip threads, short nipples. **RIGGID** universal drive shaft available for power drive; ratchet handle with each threader.

It's **RIGGID** design and quality throughout — for great performance and durability. Write today for the whole story — see the new 4P at your Supply House.

Loop handles on
gear cover for easy
non-slip handling

★
Twin-anchored
drive pinion-shaft
turns in oilless
bronze bearing

★
5 chaser dies

★
Fully enclosed
gear

New 4P is extra
easy to carry.



Millions of **RIGGID**
Tools in use

★ **RIGGID** ★
WORK-SAVER PIPE TOOLS

The Ridge Tool Company
Elyria, Ohio, U. S. A.



Builders of America's Landmarks

STEEL CONSTRUCTION typifies America. Etching the distinctive profile of every city, it reaches out across the country . . . bridging the broadest rivers, tunneling under the highest mountains. It makes distant places more accessible. It helps make all our surroundings more convenient, more healthful—basic to better living conditions for us all.

Truck transportation plays a vital role in hauling millions of tons of

mill and fabricated steel every year . . . *directly to the construction job.* It is another example of how necessary motor trucks are in practically every phase of modern life. And as in so many other industries in which loads are extremely heavy and dependability is of the utmost importance to avoid costly delays in schedules, White Super Power Trucks

enjoy the preference of the leaders. And for the new era of greater distribution efficiency ahead, the new White Super Power Trucks offer this and every truck using industry greater opportunities for better service at less cost than ever before.

THE WHITE MOTOR COMPANY

Cleveland, Ohio, U. S. A.

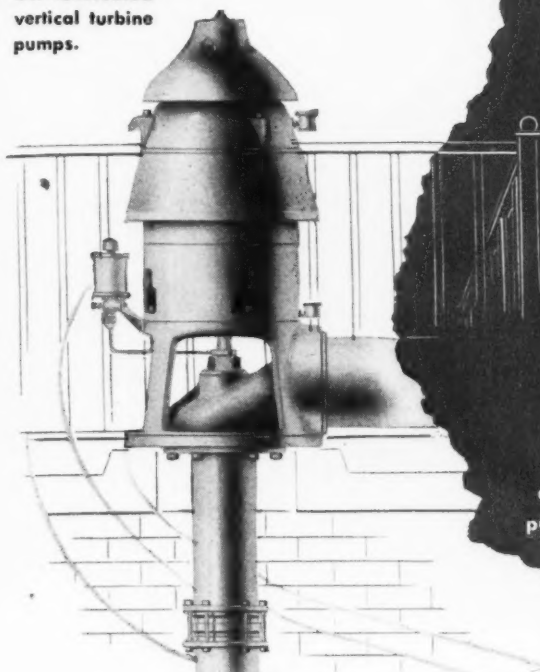
THE WHITE MOTOR COMPANY
OF CANADA, LIMITED
Factory at Montreal



FOR MORE THAN 45 YEARS THE GREATEST NAME IN TRUCKS

FAIRBANKS-MORSE:

Oil-lubricated
vertical turbine
pumps.



THERE'S NO GUESSWORK required when it comes to choosing the best vertical turbine pump for you. For the names of Fairbanks-Morse and Pomona identify every type and size of vertical turbine found in industry today; and these names stand unique in the pump-building world as two of the oldest, most widely respected and "depended upon" pump builders.

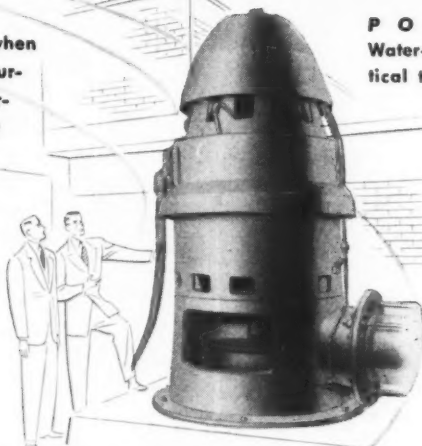


How can you tell a good Pump?

After all, what is the best way to tell a good pump? While you can compare efficiency curves, high efficiency in the test-room is no assurance of stamina on the job. Nor can performance data prove that you're getting the pump that's best for your specific liquid-moving work. *The name alone tells this story!*

Who makes it? On a good pump the name plate symbolizes manufacturing facilities, years of research and testing, trained men and intimate knowledge of all pumping requirements that back an ability to pump for you for less, through the years.

POMONA:
Water-lubricated ver-
tical turbine pumps.



GOOD PUMPS? Yes, and there are many who know these as *the best* of the vertical turbines—thousands and thousands of users who consistently report "maintenance costs nil, power costs extremely low."

REMEMBER THESE NAMES and all that is behind them when faced with a pumping problem. Then see your Pomona dealer or visit your Fairbanks-Morse branch office—the "big store" for all good pumps.

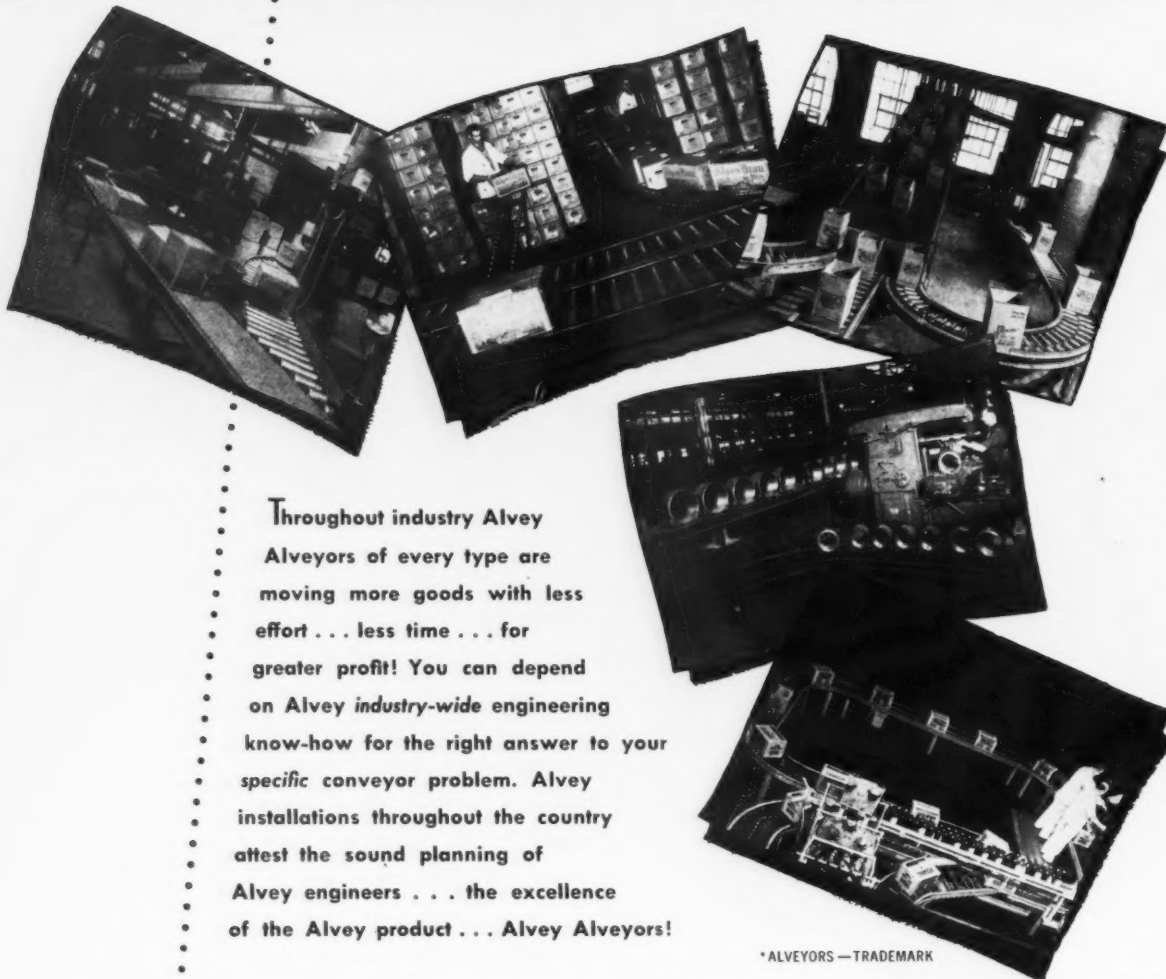
FAIRBANKS-MORSE



A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • MAGNETOS • GENERATORS • MOTORS • PUMPS
SCALES • STOKERS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT

ALVEYORS*... the word for every conveyor need



Throughout industry Alvey Alveyors of every type are moving more goods with less effort . . . less time . . . for greater profit! You can depend on Alvey industry-wide engineering know-how for the right answer to your specific conveyor problem. Alvey installations throughout the country attest the sound planning of Alvey engineers . . . the excellence of the Alvey product . . . Alvey Alveyors!

*ALVEYORS — TRADEMARK

CONSULT THESE ALVEY REPRESENTATIVES. THEY'LL ENGINEER YOUR CONVEYOR PROBLEM

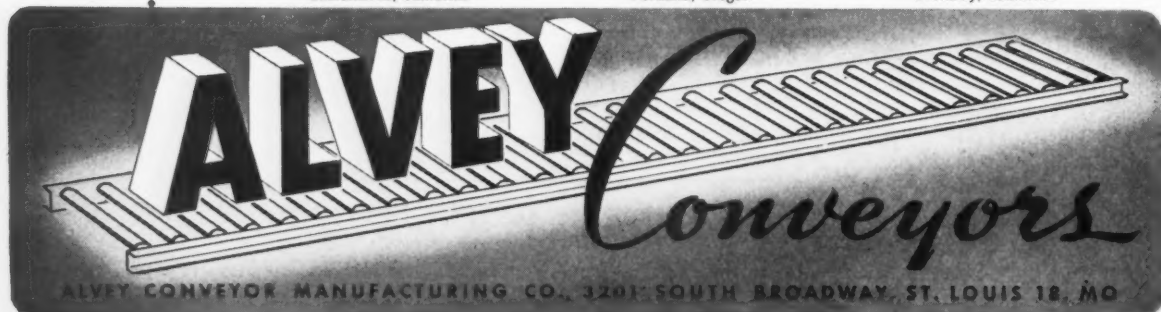
KUHN AND COMPANY
711 Gibbons Street
Los Angeles, California

F. T. CROWE CORPORATION
Walker Building
Seattle, Washington

MARKWART INDUSTRIAL EQUIPMENT COMPANY
Abern and Spear Streets
Sacramento, California

MR. R. M. DUNCAN
P. O. Box 868
Portland, Oregon

MARKWART INDUSTRIAL EQUIPMENT COMPANY
1255 East Shore Highway
Berkeley, California



U·S·S SHEETS

handle easily...
work up nicely



DIFFICULT shapes and angles are easy to make . . . true bends, tight seams and neat joints easy to obtain, when you use U·S·S Steel Sheets.

Highly resistant to cracking, rust and corrosion, and uniform in surface, flatness and softness, they may be bent, rolled, cut and stamped with ease and accuracy. These superior forming and fabricating characteristics result in speedier installation and better looking, more durable jobs.

Another reason it will pay you to use U·S·S Steel Sheets is that they

are the best-known, most widely-advertised sheets in the industry. The familiar U·S·S Label stands for dependable quality. It gives the jobs you turn out greater sales appeal . . . assures greater customer satisfaction.

Keep in touch with your U·S·S Steel jobber . . . and, remember, that while stocks at present are limited and deliveries slow, we are doing all we can to correct the situation. If you should have to wait, your patience will be rewarded, for U·S·S Steel Sheets are well worth waiting for.

U·S·S STEEL SHEETS

COLUMBIA STEEL COMPANY

San Francisco · Los Angeles · Portland · Seattle · Salt Lake City

CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago

TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham

United States Steel Export Company, New York

U·S·S STEELS FOR SUCCESSFUL SHEET METAL WORKMANSHIP

U·S·S GALVANIZED STEEL for sheet metal structures requiring the added protection of a zinc coating.

U·S·S COPPER STEEL to give twice the atmospheric corrosion resistance of regular steel at little additional cost.

U·S·S DUL-KOTE—A dull-surfaced galvanized sheet and **U·S·S PAINTBOND**—a Bond-erized, galvanized sheet, both specially prepared for immediate painting and better paint adherence.

U·S·S HOT-ROLLED AND COLD-ROLLED STEEL to provide the basic advantages of steel, plus maximum economy, in accordance with the needs of each individual job.

U·S·S STAINLESS AND HEAT-RESISTING STEELS to assure high resistance to corrosion and heat, and to reduce weight.

U·S·S VITRENAMEL — Sheets designed especially for porcelain enameling.

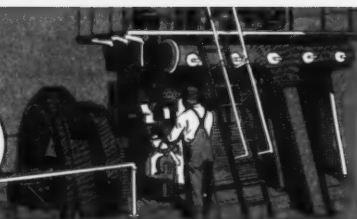
U·S·S LOW-ALLOY, HIGH-STRENGTH STEELS to resist corrosion and increase strength-weight ratio.

LISTEN TO . . . "Hour of Mystery" presented by United States Steel on the radio every Sunday evening. Consult your local newspaper for time and station.



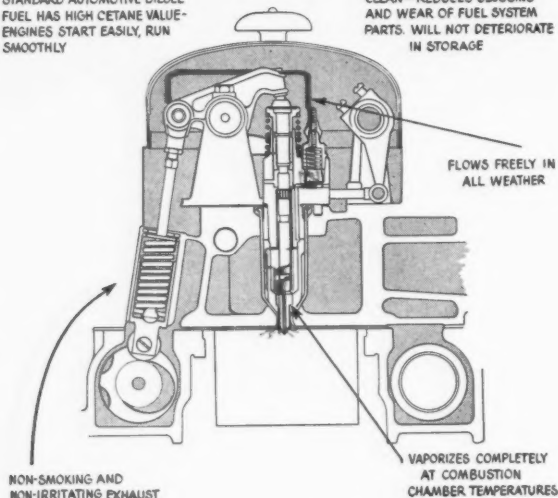
UNITED STATES STEEL

STANDARD ENGINEERS NOTEBOOK



STANDARD AUTOMOTIVE DIESEL FUEL HAS HIGH CETANE VALUE—ENGINES START EASILY, RUN SMOOTHLY

CLEAN—REDUCES CLOGGING AND WEAR OF FUEL SYSTEM PARTS. WILL NOT DETERIORATE IN STORAGE



Special Diesel fuel ends hard-starting, knocking

Where Diesel engines require fuel of high-cetane value and volatility, Standard Automotive Diesel Fuel will help them perform with maximum efficiency.

Standard Automotive Diesel Fuel is a completely distilled, quality fuel. Its range of distillation is carefully controlled during refining so that it vaporizes completely at combustion chamber temperatures, and yet provides maximum power. It has a high-cetane value—a minimum of 50. This means easy starting, even in cold weather, and smooth running with very little smoke or obnoxious exhaust odors.

The pour point of Standard Automotive Diesel Fuel is extremely low, insuring good circulation in cold weather. Because of its high stability, this special fuel will not deteriorate in storage.

For Diesel engines not as sensitive to cetane value or volatility but requiring higher viscosity for lubrication, use regular Standard Diesel Fuel.

Standard Fuel and Lubricant Engineers are always at your service. They'll gladly give you expert service—make your maintenance job easier. Call your local Standard Representative or write Standard of California, 225 Bush St., San Francisco 20, California.

Shock-absorbing grease stays in track bearings

Many operators have prolonged the lives of tractor track-roller bearings by using RPM Tractor Roller Lubricant.

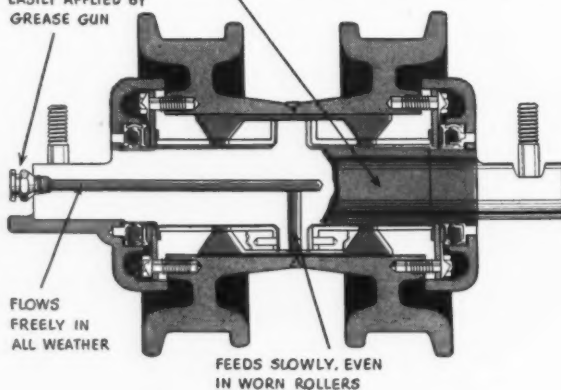
This product, made especially for these bearings, contains an unusual stringiness compound. The compound controls the flow of lubricant, assuring complete lubrication. It also keeps a tough lubricant film on bearing surfaces in all operating conditions. Acting as a cushion, it absorbs the force of shocks and load—and won't squeeze off even when the load is unevenly distributed, as in sidehill work.

RPM Tractor Roller Lubricant is water-resistant. It has a tendency to float out grit that may enter a bearing and maintains a grease-seal at outside edges against grit and moisture. It maintains an even consistency and works easily in grease guns in all seasons.

STICKS TIGHT UNDER EXTREME PRESSURES, TWISTS AND JOLTS

RPM TRACTOR ROLLER LUBRICANT IS WATER-AND DIRT-RESISTANT—HELPS SEAL OUT CONTAMINANTS

EASILY APPLIED BY GREASE GUN



CROSS SECTION OF A CATERPILLAR TRACK ROLLER BEARING

FOR EVERY NEED A **STANDARD OF CALIFORNIA** JOB-PROVED PRODUCT

INDUSTRY'S STAKE IN WESTERN CONGRESSIONAL ELECTIONS

Seniority Rules Congress And The Nation. Western Congressmen Need More Of It If They Are Going To Bring Home The Industrial Bacon.

How many Western industrialists really know what is the decisive influence at Washington concerning food products, lumber, oil, mining, agriculture, rivers, harbors, merchant marine, military and naval appropriations, aircraft, shipyards, rubber, public lands and a hundred other things of vital importance to their own prosperity?

How many Western industrialists realize that instead of saying "let's get the right kind of a guy in the White House," they should concentrate on Congress as the institution that can most affect the course of their own business?

How many Western industrialists realize that when they say "let's get that so-and-so out of Congress," or, "let's back this fellow, he's a good man," they are likely to be wasting their time and effort? Do they know why this is so?

How many Western industrialists realize that a "so-and-so" with some years of seniority can do much for them—if he wants to—whereas the finest kind of a man, if newly elected to Congress, is as helpless at Washington as a two-year old child, as far as influence is concerned?

How many Western industrialists realize that a few chairmen of key committees are practically the dictators of what Congress shall do or shall not do, and that they get those positions through seniority rather than popularity or even ability?

How many Western industrialists realize that seniority is the greatest asset in Congress in practically everything?

Consequently, non-partisan answers to the following questions concerning the West's present politico-economic situation are of vital concern to Western industrialists.

These questions are:

How will the approaching congressional election affect the interests of the West in Washington, D. C.?

Should Congress have "new blood" from the West?

Should Western committee chairmen be re-elected or replaced?

What will happen to the West:

(a) If present Western committee chairmen are defeated?

(b) If there is a change in the majority control of the House of Representatives? If in the Senate?

In the following article, first of a series of three, the author, W. G. Herron, business and governmental consultant of 710 Fourteenth Street, Washington, D. C. (born, raised, and for many years resident of the Pacific Coast) gives his answers to these questions.

His statements consist of both fact and opinion. The opinions are his own, not necessarily those of *Western Industry*. They have been formed, however, in the course of a painstaking survey, and it is the belief of this publication that they represent a sincere and careful attempt to give impartial presentation of the situation.

Previous articles by Mr. Herron in *Western Industry* stressed the necessity of increased Western influence in Congress. They were widely circulated and were instrumental in securing additional Westerners on important committees.

Mr. Herron wishes to acknowledge the cooperation of *Western Industry's* Associate Editor in Washington, D. C., in textual revisions.

By W. G. HERRON

INDUSTRIALLY speaking, the bombs that fell on Pearl Harbor literally blew the West into its first pair of long pants.

These evidences of the West's having finally attained its majority came in the form of aircraft plants, munitions factories and shipyards which Uncle Sam was forced to locate in the West despite strong Eastern protests.

Since V-J Day, however, there appears to be some question in certain quarters as to whether these new long pants will fit under peace-time conditions.

In fact, the question of whether the West will have them to wear permanently is before us and the answer depends on what both Western industrial leaders and their spokesmen in Washington are able to do to keep them on.

Washington will long continue to exert a powerful effect on industry in the West. Whether this is beneficial or otherwise depends upon how strongly Washington is told what the West requires. It depends also upon the answer to several important questions.

One of these questions is: who are the Western spokesmen who can make their voices heard in Washington?

Obviously such people are those who, during the next two years, can officially demand that the West's needs be met. In other words, they are the elected representatives of the 11 Western States, the West's 22 Senators (17 Democrats and 5 Republicans) and 49 Representatives (28

Democrats, 19 Republicans and 2 vacancies), a group of law makers whose numbers comprise less than one-fourth of the Senate and one-eighth of the House.

In comparing these numbers with those from some eastern states we find that New York alone has 45 representatives, and Pennsylvania 33, a total of 78 from only two competitive eastern states, with substantial interests in finance, steel, oil, transportation and agriculture, that are eastern rather than even national, to say nothing of being Western.

Although the West is so greatly outnumbered in Congress, does this mean that its interests cannot be protected in a regional fight?

Since the West obviously must maintain the strongest possible representation in Washington, what makes for the greater



—Photo by Acme.

• Presidents are as powerful as Congress lets them be. Committee chairmen are among its most powerful members. As head of the Truman investigating committee, Senator Harry Truman, with Senators Kilgore and Wallgren, hear John A. McCone, pres., Calif. Shipbuilding Corp., answer questions on why some Liberty ships cracked their keels.

influence there, mere numbers, or strength of its leading individual members, or both?

Who are the most influential Western members and why?

How about Congress as a whole, isn't it about time for a change? Or is it?

Might not a change provide a greater chance for Western industrial development? Or would it?

Although the present Democratic administration continues until 1948, why not have a change in control of the House and Senate now? Wouldn't that be a good thing for industry in the West, which is trying so hard to get into profitable production? Or would it?

How about our able young candidates with fine personalities and who are good speakers? Couldn't they tell Congress a thing or two? Or could they, and if so, would it really help? Shouldn't we elect them in place of our present men who have been in Congress as long as we can remember? We're hiring bright young men now in our industries, why not in Congress? Or should we? Or does Congress operate like a business, anyway?

Numerous questions like these arise in the minds of Westerners today. The correct answers to them are of definite value to indicate what the West may expect after November. Accurate information may show on which side the West's bread is buttered, or whether there will be any Western butter to spread.

Political Survey

The writer was asked by *Western Industry* to survey the situation and to determine whether these complex political problems could be reduced to business facts and figures of significance to industry in the West on an absolutely non-partisan basis. It has required much research and study to do so. The conclusions are the writer's and not necessarily those of this publication.

The results are amazing. They will not

fully please the professional politicians of either party. They certainly will not please those business men who have become convinced that their only salvation lies in a clean sweep of all political office holders.

But business men do not ignore facts or figures within their own businesses. They appreciate the value of accurate business information, and prepare to meet any conditions thus revealed.

This study is presented to provide them with the facts as to how their businesses, through their governmental relations, may be affected under several possible results of the November election. It is based on the following recognized premises:

1. The dominant force in government is Congress. It is more powerful than the administration and all of its agencies and can impose its will whenever it so chooses.
2. Influence in Congress and in Washington is directly related to the importance of a member's committee assignment, his length of service thereon, and his seniority in Congress. It does not depend upon his degree of popularity or prestige at home.
3. The most powerful members, in order of importance, are the presiding officers, the floor leaders, the legislative and appropriations committee chairmen (always of the majority party), ranking committeemen and senior members of each party, and finally other members of the various committees according to their personal seniority of service thereon.
4. The West has no presiding officers and no floor leaders. Its most influential spokesmen are its appropriations and legislative committee chairmen and senior members.
5. Because they are outnumbered by members from other sections, the West must offset this by maintaining

the most influential men in Congress that are available from each Western district.

6. Only Western congressmen can be relied upon to protect the interests of the West in Washington.

7. The immediate future of industry in the West is wrapped up in all manner of Federal legislation and administrative decisions of government.

Let us consider why it is that a member becomes such a power in Washington by virtue of holding a committee chairmanship. To understand this, the most important fact to know is that since all the real work in Congress is divided up and handled by its various committees, each committee becomes a separate working unit with its chairman as a sort of combined all-powerful leader, boss, and directing head.

Each legislative committee has general jurisdiction and the sole first right to consider legislation involving some definite field such as agriculture, labor, banking, commerce, transportation, military or naval affairs, etc., as well as any proposed legislation setting the policy and program of the department or agency that administers it such as the Departments of Agriculture, Labor, Treasury, etc., and their various bureaus and divisions.

It considers all matters assigned to it, provided the chairman so desires. He is the absolute boss of what the committee shall do or not do about any matter of business, etc., not expressly covered by action of the House itself.

Committee Chairman

The committee chairman becomes a very important figure, a personage relatively more powerful in Washington than the president or chairman of many large private corporations. He can, much more easily than they, decide or refuse to consider matters referred to him and his committee for action.

The majority of his committee members will usually back him up in anything he chooses to do. If he decides either to have a bill considered, or to kill it by not permitting it to be considered until it automatically dies at the end of the session, the majority of his committee will rarely vote to overrule his decision.

If the House wishes to consider a measure over his opposition, its rules require a written petition signed by 218 members to take the measure away from his committee so that it may be brought up for consideration. Stockholders or boards of directors can direct acts of their chairmen much more easily.

As mentioned, his committee has general jurisdiction and handles all legislation involving a specific department or agency. The chairman's great power as the principal member who makes the policy of that department, permits him to extend favors to other chairmen or officials of the Ad-

ministration, and enables him to secure favors in return that will benefit his own district.

Thus he can secure much more favorable action on legislation or appropriations or administrative decisions or projects that are needed or desired by his own constituents than is possible for any junior member or one serving on a minor committee who does not have such great influence. Committee chairmen are the most influential class of men in Washington.

Some members of Congress have served on committees where an unusual number of vacancies of members senior to themselves have occurred, permitting their rapid rise in seniority to an early chairmanship. Some have served 20 years without becoming a chairman.

An Excellent Example

An excellent example is that of Senator Henrik Shipstead of Minnesota, now serving his twenty-fourth year in the Senate. He was defeated recently at the primary election, largely by the vote of the farmers of Minnesota at the behest of Harold Stassen, who favored another candidate.

These Minnesota farmers tossed out the one man who, by his Agriculture Committee membership and rank thereon, could do as much for them as anybody in Congress, and who was immediately in line for appointment as chairman of Senate Agriculture when and if the Republicans control the Senate. They thus unknowingly handed this plum on a platter to the farmers of

Indiana, whose Senator Willis is next in line for this powerful chairmanship.

Their new Senator when elected in November must start at the bottom of whichever committee he is assigned. It may not be Agriculture and its functions may not be of direct value to the people of Minnesota. Thus, while Mr. Stassen quite properly advanced his own presidential aspirations, the very farmers who helped him do it, probably unconsciously, will be deprived of a powerful friend at court, all because the voters did not, and do not, understand that chairmen and senior members are the all-powerful people in Washington.

There were, of course, other factors in the election such as isolationism, but the moral for the West is to take a good look before throwing away the influence of chairmanships and precious committee seniority, the only forces that can offset the West's lack of numbers in Congress.

Yet another example is that of recently defeated Senator Burton K. Wheeler, of Butte, Montana, a very powerful member whose great influence in Washington has meant much to the West, and enabled him to secure favorable consideration on projects desired by the West or his state.

He is the senior Senator of the 11 Western states and the fourth ranking member of the entire Senate, the only members senior to him being Senators McKellar of Tennessee, Capper of Kansas, and George of Georgia. Senator Wheeler for many

years has served as chairman of the very important Senate Interstate Commerce Committee, of such great importance to the West because of the distance between Western centers and the markets of the east.

Senator Wheeler is also ranking member of Senate Agriculture, and of Indian Affairs, and high on the roster of Judiciary.

Senator Wheeler's position enabled him to do much both for Western transportation, rail, truck, and air, and transportation labor. He has long been one of the most powerful persons in Washington. But his successor, like the new Senator from Minnesota, must start in at the bottom.

Seniority Essential

From that bottom the majority of members never rise to one of these exalted chairmanships, because such appointments require many re-elections to build up necessary seniority to the top place on the majority party side of the committee roster. Texas learned the value of this technique long ago, and thus always holds many chairmanships during Democratic administrations.

Senator Connally's chairmanship of Foreign Relations policy-setting committee for the State Department spelled defeat for the West's opposition on the Mexican Water Treaty. This was ratified by the Senate with but 10 opposing votes, despite the outstanding leadership in the fight of Senator Downey of California.

(Continued in September issue)

*** Evidence of how powerful the offices of Congressional committee chairmen are is shown in this picture of former Secretary of the Treasury Morgenthau before the House Ways and Means Committee. Through their control over what measures shall be brought out of committee for consideration, or left to be "buried in committee," chairmen exert a tremendous influence over the doings of Congress.**

—Photo by INS.



Which Tool Is Best? Western Air Plants Face A \$64 Question

TOOLING reconversion problems are definitely among the most complex of those facing the aircraft industry in the West.

The key to those problems, says N. A. Lombard, production tooling engineer of the Douglas Aircraft Company at Santa Monica, California, will be found in the assignment of the formulation of budgets, and the preparation of pre-designs and basic manufacturing methods as a task for a select group of planners guided and advised by project tool engineers.

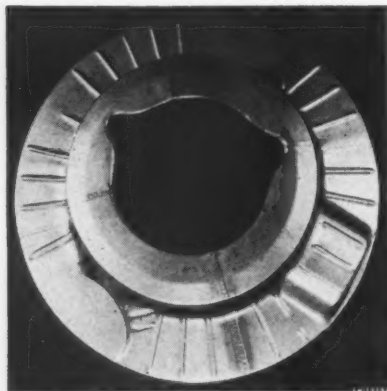
Though Lombard made that same point in an address two months ago before a meeting of the American Society of Mechanical Engineers, he is insistent that it will be no less true three months hence.

What makes such a course advisable in Lombard's opinion lies in the special factors obtaining in the aircraft industry's re-conversion program that distinguish it from those of other industries of comparable size.

Briefly, those factors are:

- (1) Constant revision of design which goes on so rapidly that "occasionally companies have found that a group of their own preliminary designers have outdated a model about to be put into production."
- (2) Abandonment for most companies of mass production methods with the cessation of 1,000-plane orders for the military.
- (3) Lack of a pre-war model, such as the automobile, refrigerator, etc., companies have, that can be put into immediate production with only minor changes.
- (4) Necessity of changing over from

• This typical one-piece part, an inner ring cowl, 48" diameter, of stainless steel, replaces a part made up of from 8 to 10 pieces. Through a greater use of one-piece parts the highly competitive aircraft industry can cut assembly labor and general handling costs by some percentage.



production of models required for war to those in which the emphasis is to be laid on commercially competitive aspects such as safety, comfort, and economic operation.

Added to these factors is another, common to industry generally, that of rising costs. How this affects the production of new models, and how closely it must be tied up with the formulation of budgets, appears in the following recent statement by Donald W. Douglas: "Cost of bringing out a new model has risen from a matter of a few hundred thousand dollars during the 1930's to a major undertaking of many millions of dollars in recent years, and there are no signs of a reversal of trend."

New Tool Requirements

While proper emphasis must be laid on reconditioning and replacing worn out or obsolete company-owned machinery, and acquiring such government-owned machinery as company needs dictate, the problems of designing and fabricating tools to meet new requirements is of utmost consequence.

More complicated parts are necessary because of the natural evolution of aircraft design that must, more and more, meet the requirements of safety and speed in the design and production economy in airplane manufacture.

A marked trend in plane production today is toward a so-called one-piece part, machined from a single piece of raw material, rather than an assembled part of riveted or welded sheet metal. This, of course, means less assembly labor and fewer parts to handle, a condition resulting in overall cost reduction.

Generally these parts will be made by specialized machines, single purpose machines and other types of precision machinery that can be produced only by capable machine tool designers.

Cost Emphasis

Inevitably this means greater emphasis on predesigning, cost estimates, budget formulating and compliance. It means working towards the principle of predetermining the cost of the most satisfactory tool that can be built in the shortest time without that predetermined cost being exceeded. It will involve the close study of use of more and more so-called standard or universal tools, use of Class "B" dies in place of Class "A" dies, and development and use of machines capable of efficiently employing Tungsten Carbide tools.

In assembly line tooling methods, emphasis will be laid on single unit assembly fixtures, rather than on multiple fixtures,

both to conserve floor space as well as to permit a reduction of tooling where possible.

This means that under certain circumstances planners must give thought to the possibility that it may be less expensive in the long run to produce parts by the machine layout method than to provide a new tool. Retention of certain types of production machinery, formerly kept in constant use but now used only occasionally, provides an additional opportunity for utilization in other ways.

Furthermore, some machine tools formerly used full time for tooling can now be open at least part time for production work. Tools in this category are jig borers, horizontal bar boring mills and duplicating machines, including Kellers.

Though many planes during the war were put into production without the benefit of a prototype, or forerunner ship, the radical and frequent changes in design today will make such a practice too risky to continue.

Prototype Tooling

Accordingly the prototype tooling program must now be very carefully analyzed on the basis of having it a combination of prototype and production tooling. Wherever possible, permanent tooling must be provided in the beginning, while special prototype tooling should be of a kind that can be reworked or added to without destruction of the original. Through such a program the time elapsing between production of the prototype and the first production model will be reduced as much as possible.

For this particular problem some advocate the establishment of an experimental tooling group to tool a prototype on a strictly one-time basis. If successful, this would result in a minimum of low cost tooling that would in the main be scrapped with the advent of the production model.

With full cooperation between the engineering and tooling divisions, this plan would mean the start of production tooling during the period of work on the prototype. Tool fabrication would be completed on acceptance by engineering of each prototype part of section. Selection of the more advantageous method would naturally be determined upon the basis of the type and complexity of the airplane design involved.

To sum up—though conversion tooling in the West's aircraft industry calls for the most careful planning with heavy emphasis on economy during such a period of rapidly changing design, planners, as Lombard said, must relearn the basic prin-

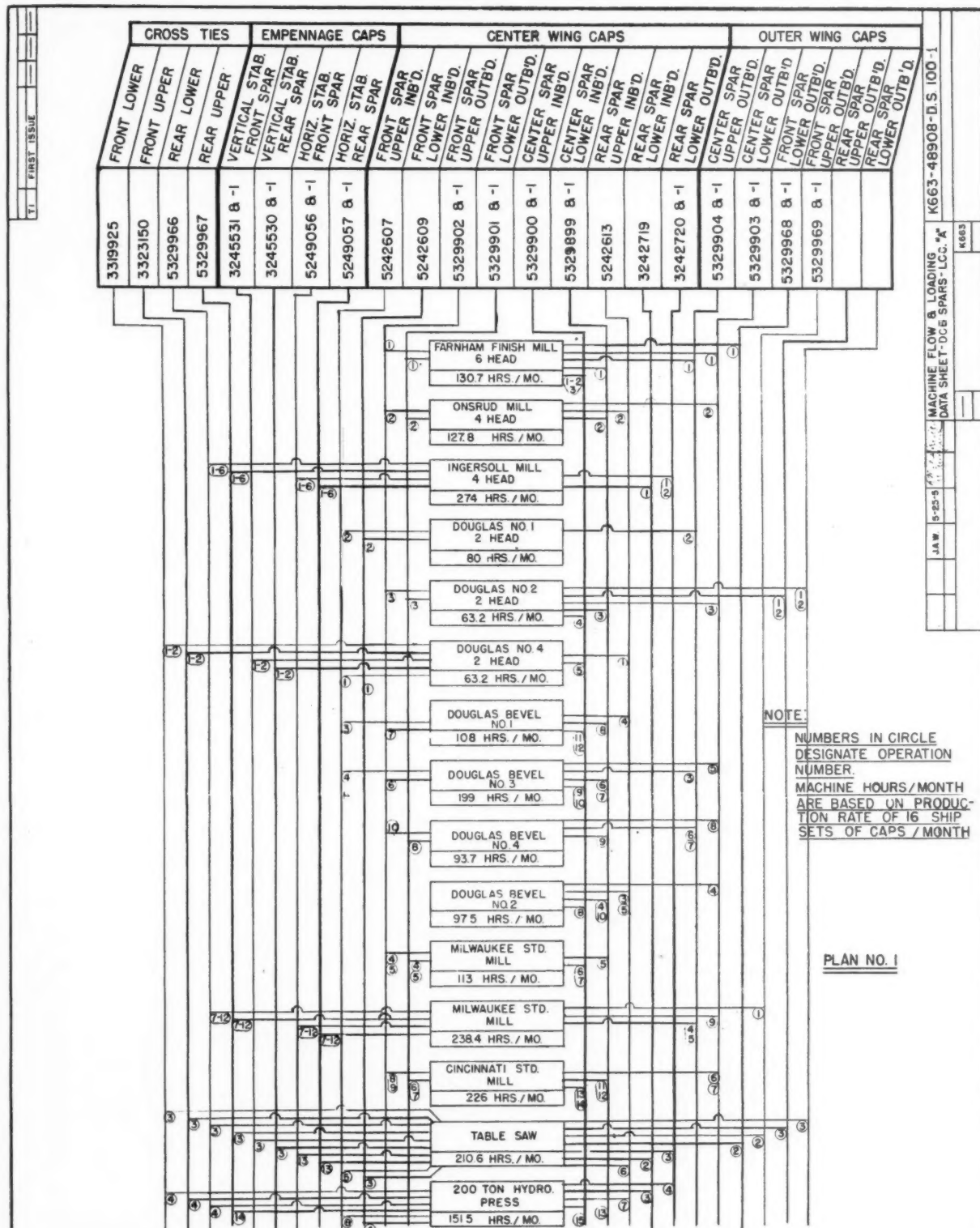
uple of planning, that "the cheapest tool is no tool at all."

Bringing that knowledge to bear on ex-

isting plant tool inventories, and present and future tool needs, aircraft manufacturers should be able to cope most effec-

tively with the rapidly changing but increasingly competitive conditions in the industry.

• With government no longer giving 1,000-plane orders, reconversion for the aircraft industry means a general abandonment of mass production at the same time it returns to a highly competitive condition. In such a period economy is of utter necessity. As a result, a flow chart for pre-loading machinery in sequence, shown below, becomes of prime importance to planners and tool engineers.



K663-48908-D.S. 100-1

MACHINE FLOW & LOADING DATA SHEET-DCB SPARS-LCC.

JAN 1945

K663

Wanted For The West—A Labor Policy Fair To Employers, Too

THE Pacific Coast from Seattle to San Diego is rich in natural resources, capital and manpower. The great empire of the Northwest, the great productive valleys and coastal regions of Central and Northern California, the San Francisco Bay area and fabulous Southern California look impatiently forward to a promised era of industrial and commercial development as the wave of the future rises in the Pacific basin.

It is now nearly a year since V-J Day. There are some who are disappointed that we haven't made faster progress in the development of Pacific Coast industry.

We have made sound progress, however, in reconvertng to peacetime production and in the founding and establishment of new industries from Seattle to San Diego and we are preparing for more. These developments have been made in the face of all of the disturbances attendant upon the change from a war economy to a peace economy of the nation as a whole and, for that matter, the world.

Many factors have impeded our reconversion effort from war to a peacetime economy. One of the most important of these factors has been lack of a sound national labor policy.

If the Pacific Coast is to forge forward to a full realization of its future possibilities for production and distribution of material goods for the inhabitants of the Pacific basin, men, money and resources must be brought together to work together in unison under a national labor policy that recognizes the equities and rights of each in our system of private enterprise and individual freedoms.

No Common Policy

Admittedly, today we have no labor policy equally applicable to Labor and Management. We haven't had one since 1935 when the National Labor Relations Act was passed and we will not have one until that Act is amended to make it bilateral in its application to Labor as well as employers. Nor will we have one then until correlative legislation is passed under which Organized Labor will be compelled to shoulder the responsibilities that go with the powers which have been given it by Government.

The National Labor Relations Act today still stands as it was enacted in 1935—an unilateral piece of legislation which set up a list of unfair labor practices chargeable against employers but which failed to set any boundaries upon the acts of labor unions or their agents. For instance, it is an unfair labor practice for an employer to refuse to bargain collectively with a

By GEORGE O. BAHRIS
President, San Francisco Employers Council

union representing a majority of his employees. On the contrary, however, the Act does *not* make it unfair for a union to refuse to bargain with an employer.

Again, the Act empowers the National Labor Relations Board to certify a union as the collective bargaining agent for the employee of an employer and to issue a directive to the employer to bargain with that union. It does not, however, give the Board any power to enforce its order as against another union which may strike the employer if he carries out the Board's certification and order to bargain.

Inter-Union Struggle

Over and over again two unions have contended for representation of the employees of an establishment. Elections have been held under the jurisdiction of the National Labor Relations Board and one union certified by the Board as a result of a majority vote of the employees of the establishment. And over and over again the losing union has thrown picket lines around the establishment, forcing it to cease operations because of inability to obtain transportation of raw materials or its finished products and sometimes even to market or install its products even if it were able to transport them. The answer of the Board to such situations as these, and they have been many, has always been: Sorry, but we cannot help you.

In other words, the employer has had to obey the certification and bargaining order of the Board, but the losing union is free to picket or boycott the employer for having obeyed the law and the Board's directives. This has been the cause of most jurisdictional strikes since the National Labor Relations Act was passed, and it will be the cause of many many more serious disturbances in production and distribution in this country until the Board is given power to enforce its orders against a union as well as against an employer, either through cancellation of the rights of the recalcitrant union under the National Labor Relations Act or through injunctive processes of the courts, or both.

As far as the activities of the unions are concerned, legally today we are practically in a state of complete anarchy. They have almost unrestricted freedom to do anything they want at any time they want to—to picket an establishment, for instance, and close it down at any time, at any place, for any reason.

They have this right even though, as it

has happened, they may have no members employed in the picketed establishment. On the contrary, if an employer discharges an employee belonging to a union, he may be guilty of an unfair labor practice and liable for the wages of that employee for the days, weeks, months or years that the employee was idle as a result of the discharge.

So much for the National Labor Relations Act, the powers of the National Labor Relations Board and its interpretations of those powers. The Act needs amending to make it bilateral and applicable to unions as well as employers.

However, other legislation is needed to establish a sound national labor policy which is so important to the development of the Pacific Coast — more important probably than to any other section of the United States. We are dependent upon a national policy because, by and large, Pacific Coast production and distribution is and will be more and more a matter of interstate and international commerce, and the unions that we are dealing with are national and international unions with branches in almost every state of the union and under central controls.

Some of the legislation that is needed was embodied in the Case Bill which was passed recently by the House and Senate but killed by a Presidential veto. Among some of the important provisions of this bill which should be and probably will eventually be embodied in legislation controlling the relations of Labor and Management are:

Proposed Provisions

1. A section making unions subject to suit for violation of collective bargaining contracts.
2. A prohibition against secondary boycotts by which unions block the distribution, use or sale of goods by employers because these goods were manufactured by firms employing members of rival unions or non-union workers.
3. A prohibition forbidding the use of economic power by unions to prevent one employer from doing business with another employer under union attack.
4. A denial of rights under the National Labor Relations Act to unions of foremen or other supervisory employees properly a part of management.
5. Provision for a 60-day cooling off period before strikes can be called legally in disputes where a federal mediation board has been asked to intervene or

has intervened in an effort to settle the dispute.

6. An anti-racketeering provision prohibiting union interference with farmers' delivery of perishable products to market.

The President vetoed the Case Bill and its proponents were unable to muster enough votes to override the veto. The Senate later passed the Hobbs Bill which is substantially the anti-racketeering provision in the vetoed Case Bill. The President has signed the Hobbs Bill and it is now law, but he signed it over the protests of the national leaders of both the CIO and the A.F. of L., and on the advice of the Attorney General that it would *not* impair any of the legitimate rights of Labor.

Employers Defenseless

It must be remembered that the Norris-La Guardia Act, passed some years ago, stripped the federal courts of their powers to protect employers against unions. As a result, employers have been practically helpless in defense of their rights against union attacks under any pretext.

Not only are employers without the protection of the federal courts of equity but their employees are often victims of union attack because of the inability of the employers to claim the protection of the courts against unbridled economic action by unions. The Case Bill was an effort to correct some of the abuses that have resulted from the almost unlimited powers given to unions and their leaders by the National Labor Relations Act, and the removal of any controls by the federal courts.

There was nothing in the Case Bill that

would have impaired the fundamental rights and liberties of Organized Labor. In fact, it did not go far enough. In addition to the Case Bill another piece of legislation should be embodied in any sound national labor policy. Perhaps it is the most important of all because it is not restrictive but is in fact liberating. It is this:

All votes by unions to call strikes or to accept or reject employer proposals should be by secret ballot supervised by governmental authority. It might well be added that demands to be made upon employers by unions should likewise be voted upon by secret ballot before they are made.

This particular piece of legislation would free union men and women from dictatorial rule by their officers and agents and turn back to members control of their unions. There is little to fear in this country from the acts of the rank and file of the membership of unions if they have control of their unions and of their officers and agents.

To be sure, there are many unions in this country today who have such control and who do have a real secret ballot by which they exercise their controls. It is a significant fact that these are the very unions which are most conservative and cause the minimum of interruptions of production and distribution. It is also significant that as a rule they are very strong unions, which proves that control of the rank and file through the secret ballot does not weaken a union.

The field of labor legislation is one which we must enter cautiously with open eyes jealously guarding against any impairment of the basic rights of our people.

The destruction of any of these basic rights of men and women to organize, bargain collectively and to strike for legitimate purposes would finally destroy the constitutional rights of all of our citizens, Management as well as Labor.

None of the legislation suggested here would impair any of Labor's legitimate rights. In fact, most of it would free the rank and file of union men and women in this country from economic and even political controls exercised in some instances by entrenched labor dictators and would-be dictators.

Given a national labor policy under which the rank and file of Labor can control its own unions, and under which the officers and members of unions would have to accept the responsibilities of the powers given them by Government and by the courts, Labor and Management in the West from Seattle to San Diego would be able to work together profitably for themselves as well as profitably for the public.

Mutual Assurance

Capital and Management would have assurance that their rights would be protected; that the commitments made by Labor would be respected; that they could plan and build for the future on the basis of these commitments.

In turn, Labor would be protected, as it is now, against the destruction of any of its rights by Management. In the long run we would then have a working coalition that would protect the rights and freedoms of individual management as well as all of the precious individual freedoms that we have inherited under our democratic constitutional government.

• Labor policy fair to both capital and management alike, could work nationally as well as for a city. Below, San Francisco Labor and Employer Council members meet to sign an agreement. Third from left is George Bahrs, president, S. F. Employers Council, author of above article. Fourth from left, Wm. G. Storie, vice president, executive secretary of the council. Third from right is John F. Shelley, president of the S. F. Labor Council. Shelley is now Democratic candidate for the office of Lieutenant Governor of California.



Proper Salary Policy Is Needed For Spending Personnel Dollars

Last month's installment of this article discussed organized salary administration in three aspects: job analysis, job measurement and job grade assignment. In this, the concluding installment, the author deals with job pricing, salary determination and policy, organization of salary administration and how to keep it effective.

By A. E. WEROLIN
McKinsey & Company
Management Consultants, San Francisco

ANALYSIS, measurement and job grade assignment are all essential parts of a job evaluation study, as was indicated in last month's installment. Now we must consider the relationships between money, people and job preference.

When we have established the relationships between jobs, we must put a dollar

value on them before getting people to work. Here is how a medium size West Coast company recently took this step:

First, a salary survey was conducted within the area and within the industry to secure salary rate data for comparative purposes. Representative jobs were selected to give a good cross-section departmentally at all levels.

The salary rate data thus compiled was analyzed to reveal the going rates in the community and the industry. The company's present salary structure was analyzed and compared with these going

rates in order to establish a tentative rate structure. The selection of the ultimate rate structure was based on several considerations, such as, the company's policy to pay below, at, or above area rates; the immediate and near-term effects on pay-roll costs; and collective bargaining.

The job pricing phase is completed by establishing intermediate salary step rates for payment within the rate ranges on the basis of merit or length of service.

Salary Determination

With that done, job evaluation work has been completed, but this in itself does not constitute organized salary administration. The chassis has been built, now the body must be provided. That is, the structure must be set up for administering salaries within the job evaluation ranges.

As a result of job evaluation data, we have rate ranges with intermediate step rates. How will the employees fit into them? How will the new rate structure affect individual salaries?

An analysis of any pay-roll in terms of the newly established rate ranges will indicate considerable over and under payment. Experience has shown that a rate structure developed as a part of a job evaluation study will reveal 25 to 40 per cent of the salaries as out of line.

A simple illustration of this problem, which is quite generally encountered, is that involving typists with the evaluated rate range set at \$30-\$38 per week. Actually, in one company current salaries for typists ranged from \$22 to \$34 per week.

Salary Policies

The immediate problem confronting the company, therefore, is how to handle any over and under payment in the jobs on an equitable and practical basis. The company must decide, as a matter of policy, how under payment should be handled: Shall employee salaries be raised to the minimum in all cases; immediately or gradually? For existing salaries beyond the job maximum, it is common practice not to reduce salaries. Instead, such cases are best studied individually to determine whether the over payment can be offset in whole or in part by training and upgrading, or by transferring.

The company must next decide how to pay current employees whose salaries are within the established job ranges, as well as new or promoted employees. This will require policy formulation which involves determining the starting rates for new employees and promoted employees; the size, frequency and method of salary increases within the rate ranges; the manner of sal-

*** Salary administration plans are not panaceas, but properly used they are an important management tool. Essential to their proper use is such a form as that shown below.**

EMPLOYEE PROGRESS REVIEW

NAME _____ NO. _____ TOTAL POINTS _____ GROUP _____
DEPT. _____ JOB _____ GRADE _____
RATED BY _____ DATE _____ APPROVED BY _____ DATE _____

INSTRUCTIONS

The following factors determine how well an employee is handling his job. Study each factor and its description carefully in the light of actual performance only. Indicate by a check (✓) in the space provided the degree to which the employee meets the specifications of the factor.

A check mark to the right indicates he does not quite measure up to specification.

A check mark in the center indicates specification adequately covers employee.

A check mark to the left indicates superiority to specification.

After checking employee on all factors write under the heading of "additional comments" on the reverse side of this form any additional information about employee which you feel has not been adequately covered by all factors.

FACTOR	1	2	3	4	5	6	7	8	9	10	11	12
A. QUALITY OF WORK Appraisal of employee's performance in meeting established quality standards of work.	Exceptionally accurate Practically no rejects or errors			Usually accurate Only occasional rejects or errors			Passable work Frequent rejects and errors					Work extremely careless Numerous rejects and errors
B. QUANTITY OF WORK Appraisal of volume of work produced under normal conditions.	Exceptionally rapid worker—Output unusually high			Good Producer—usually above average			Barely produces required amount of work— slow worker					very slow worker Usually below required production
C. JOB KNOWLEDGE Appraisal of how well employee knows his job	Exceptionally thorough grasp of elements of job			Good working knowledge of job—Barely needing any assistance			Limited knowledge of job requires certain amount of supervision					Inadequate knowledge of job—Requires constant supervision
D. ADAPTABILITY Appraisal of ability to meet new situations and understand new routines and explanations.	Learns and understands new situations and routines exceptionally rapidly			Fast learner—Can handle different work with little instructions			Learns slowly requiring detailed instructions but able to retain instructions					very slow to learn—limited in ability—Great difficulty in adjusting to new situations and instructions
E. DEPENDABILITY Appraisal of your confidence in employee to carry out all instructions conscientiously	Exceptionally conscientious—minimum supervision required			Follows instructions well—Requires little follow-up			Usually follows instructions but requires occasional follow-up					Cannot be relied upon requires constant follow-up
F. GENERAL ATTITUDE Appraisal of attitude toward work and company policies	Exceptionally cooperative toward work and company policies			Usually cooperative willing to try new ideas			Occasionally reluctant to cooperate but will try new ideas upon persuasion					Does not cooperate Little interest in work or company

ary decrease in a demotion; payment in case of temporary or permanent transfer; and recognition of length of service—within the range or beyond the range maximum.

There are other salary policies that usually come into play: promotion from within, probationary periods, sex differentials, job posting—these also are directly related to the base salary ranges established through job evaluation.

Certain policies not directly related to job evaluation but which affect salary administration should also be considered. These would include policies governing salary supplements, such as: commissions, premiums, bonuses, vacation schedules, employee discounts, group insurance, sickness and disability pay, severance pay, and other similar forms of additional compensation.

It is essential for sound salary administration that salary policies be carefully defined and put into writing so that they may be understood by all personnel responsible for salary administration, as well as rank and file employees. Many companies have found it desirable, upon installation of the program, to distribute a booklet outlining the policies and procedures of their salary administration.

Organization for Salary Administration

Final authority and responsibility for salary administration is, of course, vested in the chief executive. But every supervisor down the line shares that responsibility.

What you want to avoid is having the program directed from the ivory tower. The department head is the key man at the work level to interpret salary policies to his subordinates and recommend salary increases for them.

To attain maximum effectiveness of salary administration and reasonable control of salary expense, it is generally desirable to establish a Salary Committee. The major duties of this group would be:

1. Approve or revise all recommendations for individual salary adjustments.
2. Approve the grading of all new jobs and regrading of old jobs.
3. Review periodically the relationships of existing jobs.
4. Approve new rate ranges for job grades that reflect desired changes in office salary levels brought about by changes in general salary levels.

Generally, the working head of this committee is the Personnel Relations Supervisor.

Progress Review

To insure uniform and equitable administration of salaries, provision should be made for periodic review of the job performance of all employees. This should be done not less than once a year; it is common practice to conduct it semi-annually.

This review can be undertaken on an informal basis which would be merely recommendations for salary adjustments by the department head. Or it can be done on the basis of a formal merit rating plan, in which the progress of all employees in the department is appraised on a statistical comparative basis.

The relative importance of merit rating vs. length of service is in itself controversial and requires special study for each company. But it is important to stress that the salary administration picture is not complete or workable until a definite and regular plan is adopted for making adjustments within the rate ranges established.

Keeping the Plan Effective

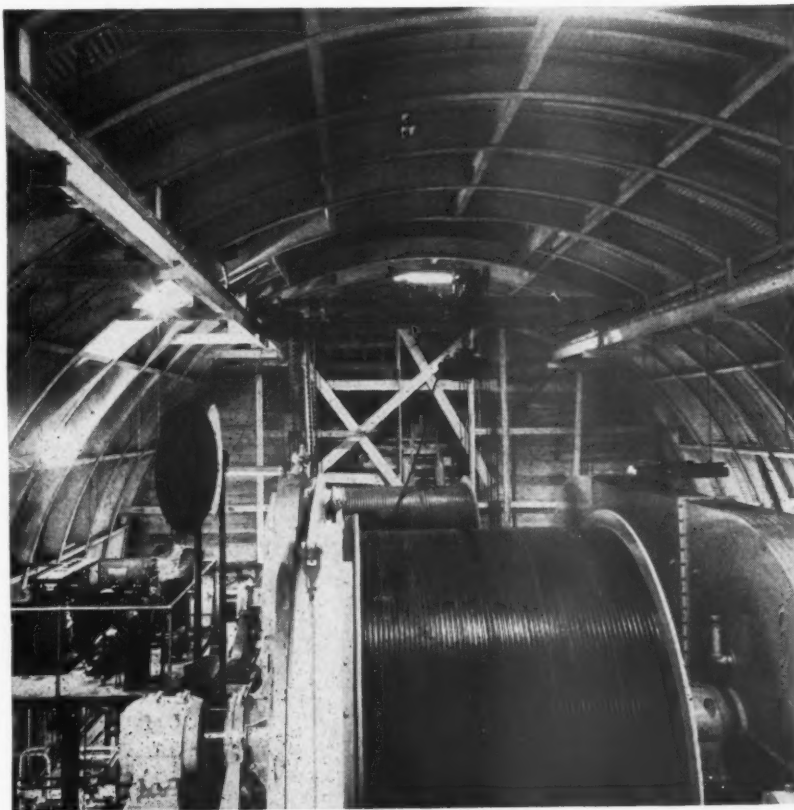
When the plan is installed, the company should feel that it has done a good job if 90 per cent of the job relationships are sound. The plan should go on a "shake-down cruise"—use it for six months in its completed form and then hold a review to identify the 5 to 10 per cent of jobs that may be out of line.

Annually the company should conduct a review of the entire plan. Between annual reviews, adjustments should be made to reflect changes in job content as they occur. Just as remaining competitive requires the company continually to study merchandising techniques, so, too, should the salary plan undergo continuous scrutiny for the company to remain competitive in the personnel market.

There is a final note of caution. A plan of organized salary administration is no panacea for solving all operating problems. But it is a sound tool for assisting management at all levels in discharging its responsibilities for personnel administration.

The company executive responsible for effective personnel administration can, through organized salary administration, answer for each employee in his company these three questions: What is his job? What's it worth? And how's he doing? This will provide a good start in building real job satisfaction and employee morale which, in essence, is the goal one wishes to achieve.

• The old song "Don't Go Down the Mine, Daddy!" would have small application to workers at the Kellogg, Idaho, mine of the Bunker Hill & Sullivan Mining and Concentrating Company, thanks to its new hoist installation. Net skip loads to the weight of ten tons, live weight or otherwise, are easily handled by the new equipment. It is fast, too. Rope speed on a 50 degree incline amounts to 1,500 feet per minute, well over a quarter of a mile, or 15 miles per hour. Drums used, as shown in the picture below, are 12 feet in diameter with an eight foot face. They are grooved to wind 6,000 feet of rope, 1 1/2 inches diameter. Tandem geared, they are driven by two 600 horsepower motors operating on a direct current. Power comes from a three-unit motor-generator set of two 600 KW DC generators driven by a single 13,000 volt motor. Control system is a Ward-Leonard.



Geneva Steel Outcome Due To Western Industrial Teamwork

NOW that the fate of Geneva is settled, it begins to be apparent that its sale, a step in insuring the future of a basic industry in the West, was a significant experience in teamwork by industry and business in the eleven Western states.

It may well set a pattern for future "all-Western" cooperation, for two reasons. First, because of the manner in which it solidified Western thinking regarding its industrial future. Second, because it was handled from the standpoint of the general good of Western steel users, rather than as a campaign in favor of any specific prospective purchaser or for merely continuing the existence of a big war plant.

Although individual localities in the West have fought hard many times for something directly affecting their interests, just as the Utah people did in this instance to insure that the Geneva steel mill would be kept operating in the postwar period, never before has a purely industrial problem been presented requiring consideration on an "all-Western" basis.

To be sure, the disposal of water and power from Boulder Dam necessitated a formal agreement between seven of the eleven Western states, and five Pacific Northwest states have an interstate committee arrangement for discussing similar Columbia River problems, but these situations involve only particular regions within the West. Furthermore, they are primarily agricultural and political matters rather than industrial.

But for this all-Western cooperation, Geneva easily could have been a closed-

down \$200,000,000 "war orphan," instead of a going institution of primary importance committed to a pricing policy expected to help materially in putting Western manufacturers on a more competitive level with eastern plants.

Geneva might not even be there at all today, if the Government had carried out the plan it once entertained of packing the

mill up and shipping it to Russia to replace one lost at sea.

From the time it was first projected the future of the plant was continually in doubt, because its main purpose was to supply plates for ships that were being sunk by the enemy about as fast as they were built. In the early years of the war, Geneva seemed to hold no promise of postwar utility, except perhaps in the far-distant future. United States Steel Corporation, called in by the Government to build and operate the mill during the emergency, had decided prior to the war to enlarge their facilities at Birmingham, Alabama, before putting any more money into Utah, where they already had a small mill at Provo.

Eventually, as it became apparent that the West's war-time industrial expansion was not temporary, but would remain afterward, Geneva began to be revealed to Western eyes as a primary postwar factor. If it were to fall into the hands of anyone else, like Bethlehem, for example, it would become a serious competitor to U. S. Steel's Pacific Coast subsidiary, Columbia Steel Company. Yet U. S. Steel was not in a position to take any steps toward postwar purchase, nor did the Government have any real disposal plan of its own.

The motivating force came from the West, and although Utah business and political interests were unremitting in their efforts to keep the mill in postwar operation, the birth of the Western States Council late in 1944 brought into existence an organization which could speak for the

Western States Council Steel Committee

Kenneth T. Norris (chairman), president, Norris Stamping & Mfg. Co., Los Angeles; R. N. Allen, Star Iron and Steel Company, Tacoma; Gus P. Backman, secretary, Salt Lake City Chamber of Commerce; Clark D. Carpenter, professor of metallurgy, Colorado School of Mines.

F. T. Letchfield, assistant vice-president, Wells Fargo Bank and Union Trust Co., San Francisco; Charles E. Moore, president, Joshua Hendy Iron Works, Sunnyvale, Calif.; A. T. Peterson, president, Montanans, Inc., Helena. Alden Roach, president, Consolidated Steel Corp., Los Angeles; W. M. Schmitt, president, Schmitt Steel Co., Portland; John R. Simplot, president, Simplot Dehydrating Co., Caldwell, Idaho; E. L. Soule, president, Soule Steel Co., San Francisco.

Milo B. Spaich, general manager, American Forge Co., Berkeley; Clyde Summerville, president, Seattle Steel Company; Charles Voigt, president, Stearns-Roger Mfg. Co., Denver; John M. Wallace, president, Walker Bank and Trust Company, Salt Lake City; James F. Bone (secretary), manager, industrial dept. Los Angeles Chamber of Commerce.

* Western States Council steel committee meeting at Los Angeles in May, 1945, where the all-western steel policy was formulated that the government accepted. Front row, from left: Soule, Simplot, Chairman Norris, J. I. Hemmings (Southern California manager, American Forge Co., substitute member); Fred Robbins (vice-president Plomb Tool Co., substitute member). Rear row: John E. Barber (executive assistant to president, Consolidated Steel Co., substitute member); Charles Cook (vice-president, Isaacson Iron Works, Seattle, substitute member); C. J. Daiss (general manager, Moore Mach'y Co., substitute member); Schmitt, Carpenter, Letchfield, Bone.



"We Pulled Together," Industrial and Financial Leaders Tell "Western Industry"

A. P. GIANNINI, *Founder-Chairman
Bank of America
San Francisco*

There is good reason to assume that the acquisition of the Geneva steel mill by United States Steel, and its promised development and operation, was the product of teamwork by business and industrial leaders in the Western states.

The campaign to save Geneva as a Western key industry gave opportunity to prove the past growth and future potentiality of this region, to point to the power of this land to attract new permanent population, to review Western capacity to produce as demonstrated during the war, and to emphasize the strategic position of this area in the forthcoming development of trade with the Orient.

The unity of the Far West in the presentation of its case was impressive and no doubt had much to do with the decision of United States Steel to make a substantial investment here and to join with us in developing our vast resources. We are justified in expecting that the Corporation's producing skills, marketing organization and financial wherewithal will prove to be increasingly valuable assets to the Western states as the commitments of the Corporation, publicly announced, are carried through.

All this proves that teamwork can produce results. It should encourage our Western leaders to pursue this policy in forging the framework of our future growth.

D. D. MOFFAT, *President
Utah Copper Company
Salt Lake City*

Of course, we who are interested in the expansion of industry in the West were pleased at the display of cooperation on the part of all the agencies in the West in obtaining the sale of the Geneva steel plant in Utah, to a private corporation pledged to develop the steel industry on an expanding basis.

If the West is to provide employment for large numbers of people who are now seeking to establish permanent homes in this area,

expanding industrialization is the first essential, as only through the providing of employment in new fields can the economy which is necessary to provide the income for these people be maintained.

All agencies, political, civic or business, must cooperate in keeping the most friendly attitude possible toward existing industries and new industries which may be induced to establish themselves in the West.

A. T. MERCIER, *President
Southern Pacific Company
San Francisco*

In view of our great interest in the West, we watched with much interest action taken by chambers of commerce, and others, with respect to the Geneva steel mill.

Our traffic officers have been very close to developments in this situation, and while future of the Geneva steel mill depended on ability of some steel manufacturer to purchase it, with assurances that Western states would provide sufficient market to make it pay, I think interest displayed by representatives of the eleven Western states was sufficient to help crystallize the situation.

I am a firm believer in teamwork and feel Western states as a group will derive more benefit by viewing matters of this kind on a broad scale than from the standpoint of one community. In other words, anything that tends to build up Western territory as a whole is beneficial to all.

H. W. MORRISON, *President
Morrison-Knudsen Company, Inc.
Boise, Idaho*

All industry in the West should, in my judgment, be appreciative of the work done by your publication and leaders of industry in the bringing about of the sale of this plant to the U. S. Steel Corporation.

We basically should realize the tremendous growth and development of the Western part of the United States, which will be stimulated by the development of an integrated steel

plant in our area. Furthermore, in my judgment, future trade with the Philippines and the Orient open up tremendous possibilities for all industry on the West Coast.

We believe the property is properly placed in the hands of the U. S. Steel Corporation for the reason that they are financed to expand and integrate to whatever extent necessary to meet demand for a wide variety of steel products as it develops.

B. P. MANLEY, *Executive Secretary
Utah Coal Operators Assn.
Salt Lake City*

In my opinion, if it had not been for the teamwork exercised the continuance of Geneva steel mill operations would not have been assured. Undoubtedly, in the development of the West and in particular of its natural resources, occasions will arise where of necessity the efforts of the "All Western" group will be needed to enhance these developments—for here we have the natural resources and the energy available to produce and process them.

The "All Western" group should, looking towards fulfillment of the West's destiny, ally themselves, financially, industrially and politically.

As to the teamwork demonstrated in the Geneva case, in my opinion, said teamwork was woefully meagre, for while much lip service was put out, the real hard digging, together with the "legwork," was done by but a few people and those few refused to admit defeat and never did, although it was apparent they were licked on at least two occasions. These few great guys just tore into the job, worked harder and longer. The results speak for them in perfect eulogy.

No, the teamwork displayed in the Geneva case was but a pittance of the team energy the All Western group could put forth, if they really went to work. The teamwork displayed could not have been of better quality, but more people should have been playing on the team at least in the outfield and even for carrying the water bucket.

entire West. It represented nearly 100 chambers of commerce in the eleven Western states, and the Council's steel committee, whose membership included a number of important steel users, proved to be the decisive influence in steering the Geneva negotiations to a successful conclusion.

The final outcome was on the basis of three principles laid down by the committee in May, 1945, as follows:

1. The mill must be put in the hands of private enterprise, not continued as a Government operation.
2. It must be sold at its real commercial value, without regard to what it cost as a war plant.
3. The purchaser must be committed to a policy of pricing the products of the mill on a basis of cost of production plus a reasonable profit, instead of the past practice of using the eastern basing point price and adding the freight, irrespective of the fact that the material might have been made right in the West's own back yard.

As the representative of such a large portion of Western business sentiment, its stand for private enterprise nipped in the

bud any governmental aspirations toward wedging a public ownership factor into the steel business.

Its call for a sale at actual market value not only resulted in prompt disposal, but also avoided a prolonged situation of uncertainty and political maneuvering that might have been a depressing cloud over industry in the West for years. Furthermore, it paved the way for a comparable logical and fair scaling down of the RFC loans on Henry Kaiser's Fontana steel mill, which at present bind him to pay full wartime costs. In fact, a request to the Government for such a Fontana adjustment may be an early action by the steel committee.

Its insistence that any deal should be predicated upon a commitment by the purchaser that prices would be based upon cost of production in the West plus transportation and a fair profit was accepted by the Surplus Property Administrator and bidders were requested to make a statement of pricing policy. The successful bidder did make a commitment as to the pricing policy which the Steel Committee believes will result in substantially lower

prices for steel produced in the West.

The committee's position necessitated steering a difficult course between the advocates of Geneva-at-any-cost, the fervent Kaiser partisans and the hoppers-for-CF&I. Not until after the Geneva bids were opened and a final and unsuccessful check-up made with Colorado Fuel & Iron Corporation to ascertain if CF&I would make a definite commitment as to its pricing policy if it acquired Geneva, did the committee make a decision to support U. S. Steel as the logical purchaser. Then it asked the member chambers of Western States Council to recommend U. S. Steel, and they responded overwhelmingly.

Founding of the Western States Council, composed of representatives of chambers of commerce in the eleven Western states, took place at the national convention of commercial secretaries at Kansas City late in 1944, and the Western secretaries present took a long chance that their member chambers would accept such an idea, but history proved they were right. There had been a long-felt want for an over-all organization which could speak for the entire West on various matters, but

it became apparent almost immediately that the Council's first job would have to be prompt action to prevent the Western steel situation from being shaped by political considerations.

The situation had been thrust into political channels earlier in the year at Carson City, when acrid interchanges between representatives of the Kaiser organization and U. S. Steel had taken place at a meeting of the committees on interstate co-operation of the state governments and legislatures of California, Oregon, Nevada and Utah.

It was decided that the only safe and satisfactory way to approach the steel situation was to divest it of all politics, ballyhoo and local considerations, and consider all angles from a purely economic basis. Accordingly a conference was called for Salt Lake City in February, 1945, of representatives of chambers of commerce, industry and government and a program carefully worked out to present the subject as impartially as possible.

At the Salt Lake City meeting requirements of a successful steel industry were presented by an outside expert, A. J. Boynton of Chicago; the West's ability to maintain a successful steel industry by Dr. J. R. Mahoney of the University of Utah; the position of the Western manufacturer of steel products by Morris B. Pendleton of Plomb Tool Company, Los Angeles; the industrial development of the West by F.

T. Letchfield of the Wells Fargo Bank & Union Trust Company of San Francisco; the position of the railroads by W. W. Hale of the Southern Pacific and a governmental view of disposal of iron and steel plants by Senator Brewster of Maine.

A permanent steel committee was appointed at Salt Lake City composed mainly of industrialists, representing every one of the eleven Western states and including a sizeable proportion of the steel buying power of the West. Its program followed strictly the line of impartial economic approach laid down at the Salt Lake City conference.

At that time there was no certainty of anyone becoming interested in taking over Geneva and giving the West cheaper steel. President Fairless of U. S. Steel had previously announced that his company was not interested in buying the mill and no other prospects had appeared on the scene.

The committee's first work was to compile reports on Western steel production, pricing and freight rates, and to check them with the research departments of U. S. Steel, Kaiser and other operators. Committee members from various parts of the West, including the heads of smaller steel mills, aided actively in this effort to analyze the problem objectively, and on May 15, 1945, a well-attended meeting was held at Los Angeles, where the disposal policy for government-owned steel plants was formulated.

Following this, Mr. Fairless announced his company would be interested in purchasing Geneva, but shortly afterward the then Attorney General, Francis Biddle, stated that U. S. Steel would have difficulty in obtaining Government approval of the purchase because of monopoly considerations. Thereupon U. S. Steel declined to bid under such a contingency.

Norris Follows Through

Continuing the committee's efforts, Chairman K. T. Norris went to Washington and convinced Surplus Property Administrator Symington that the committee's pricing policy should be included in his forthcoming report to Congress on disposal of surplus iron and steel mills, and that sealed bids should be called for.

Because there was no adverse action by Congress within 90 days after Symington's report was submitted to the Senate Military Affairs Committee, the report became Government policy. Chairman Norris then communicated with President Fairless, who advised him informally that U. S. Steel would submit a sealed bid under such conditions.

When the committee met after the opening of the bids at Washington, there was some Utah sentiment in favor of the CF&I proposal, because it would call for more immediate expenditure of money in Utah than any other. As mentioned earlier, an effort was made by long-distance telephone to ascertain CF&I's pricing policy, which had not been mentioned in their bid.

No tangible commitment could be obtained, however, and the committee then recommended U. S. Steel as the bidder whose proposition would be most helpful to the West. Even then, they asked that the bid be revised to commit U. S. Steel to a policy of leadership in steel pricing, instead of merely saying that the corporation would meet competitors' prices.

Colorado people gave active support to CF&I at the end, and their hopes were considerably raised by CF&I's attempt to submit a second bid of \$40,000,000, nearly equalling that of U. S. Steel. But the graceful acceptance by CF&I officials of defeat closed the case.

As the Fontana steel mill is owned by the Kaiser Company, Iron & Steel Division, subject only to a Reconstruction Finance Corporation loan, it did not figure as a war plant affected by the Western States Council steel policy. The committee did, however, after hearing a proposed re-financing of Fontana, explain to the RFC that while they were not supporting this particular plan they felt that Kaiser was entitled to an adjustment on the same basis fixed for Geneva.

Western Basing Points For Steel

U. S. Steel's bid says: "Pricing policies which will be followed with respect to the sale of products to the public from the Geneva plant will be the same as the pricing policies generally followed by the various steel producing subsidiaries of United States Steel Corporation. These policies would involve the sale of products of Geneva to customers at the lowest possible price consistent with a reasonable re-

turn to stockholders.

"In the active markets for steel on the Pacific Coast, Columbia Steel has always endeavored to price its products competitively and proposes to do so in the future. For all products which will be produced at the Geneva plant and which will be sold to the public on the basing point of selling, a basing point will be established at Geneva."

Want Geneva Freight Rates Lowered

Profitable operation of Geneva will depend to a large degree upon reduction of freight rates to the Pacific Coast, according to U. S. Steel's bid. Consequently, it is seeking a rate of \$8 per net ton on finished steel for the entire coast, San Diego to Seattle. Present ordinary rate \$12 for all points as far north as Portland, \$13.20 to Seattle, but government had wartime rate of \$8 a ton on government material to California, \$9.50 to Portland and \$10 to Seattle.

Proposed rates to be considered at joint meeting of the north and south divisions of Pacific Freight Tariff Bureau at San Francisco July 31. Rate of \$8.61 per gross ton also sought on semi-finished steel and \$10.85 per gross ton on pig iron shipped to Gulf and South Atlantic ports.

"Geneva is an integral part of the great Pacific Coast market from a standpoint of freight rates," said E. G. Plowman, vice-

president in charge of traffic for United States Steel Corporation. "I am enthusiastic about the possibilities of Geneva, of what it can do and what it means to the West."

From a railroad standpoint, Ambrose J. Seitz, vice-president in charge of traffic for the Union Pacific Railroad said: "In the interest of this territory and traffic development, I feel free to state that all of the carriers are anxious and willing to enter into rate negotiations with the owners of the plant.

"Union Pacific, and for that matter any railroad, has as its primary objective the development of traffic. That is a mutually beneficial undertaking as between industry and the railroads because commerce is vital to the operation and growth of the railroad. Plainly and simply stated, Utah's problems are Union Pacific's problems."



* There's nothing wrong with this picture of a typical Western freight yard. On the surface it looks good. A study of the little matter of railroad freight rates, however, shows that the West is still unquestionably being discriminated against in favor of the East.

EASTBOUND—Rate Discrimination

**Liberal Rates Apply for Eastern Manufacturers Shipping West, But
For Western Manufacturers Shipping East It Is Now Another Matter**

INDUSTRY all over the Pacific Coast stands to benefit by the California Manufacturers Association transportation campaign. The first step proposed is to get the same freight rate privileges for California manufacturers shipping east or north as are now afforded to eastern manufacturers shipping west.

The underlying purpose of this campaign is to promote a sympathetic attitude among California carriers toward the transportation needs of manufacturers on the Pacific Coast generally. This involves adequate adjustment of rates, rules and regulations necessary to place the western manufacturer on a competitive and related basis in all markets.

To this end, meetings have been held with Presidents F. G. Gurley of the Santa Fe, A. T. Mercier of the Southern Pacific and Charles Elsey of the Western Pacific, by Alvin E. Hewitt, Executive Vice President of the association, L. E. Osborne, Executive Vice-President of Aircraft Traffic Assn., Morris B. Pendleton, Vice-President of CMA and President of Plomb Tool Co. The last two conferences were mentioned in the July issue of *Western Industry*. A similar discussion was had with the Union Pacific executives.

Manufacturers in the Pacific Northwest will gain equally with California, because

they will get identical privileges in shipping into California territory.

Immediate efforts of the California Manufacturers Association will center on support of Transcontinental Freight Bureau Application No. 3013. This proposes that rail carriers establish the same arrangements for eastbound mixed carloads of various commodities as those carriers have provided westbound for some years.

Rule 10's Application

Under TFB Rule 10, which applies in rate territories everywhere in the country with the exception of eastbound transcontinental traffic, everything in such a mixed carload takes the highest carload commodity rate applicable to any of the items loaded, subject to the highest minimum weight provided for any article in the car. This provision makes it possible to gain westbound rates for less carload shipments slightly higher than the carload rates on the same articles. Even more liberal arrangements are provided at Chicago, at Mississippi River points, and points east thereof.

Most freight shipments get the benefit of low commodity rates, which are established for definite individual products that move with greater regularity than the sporadic or new movements which are handicapped by the availability only, of higher

"class" rates. But on eastbound shipments Pacific Coast shippers are at a disadvantage because eastbound rates on mixed carloads are governed by use of the following alternatives, as set forth by Alvin E. Hewitt, Executive Vice-President of CMA:

1. The highest "class" rate applicable on any of the articles in the car and subject to the highest "minimum" weight provided for any article in the car. For example, the carload comprises articles A, B, C and D. Article "A" has the highest class rate of \$3.00 per hundred. Article "D" has the highest "minimum" weight at 40,000 pounds. In this case, the carload would cost \$3.00 x 400 c.w.t. or \$1200 if there was 20,000 pounds or less, regardless of rates on "B," "C," and "D."
2. Use of a carload commodity rate on one of the articles loaded and subject to its own minimum weight; plus LCL class or commodity rates on each other article loaded. For example, article "A" has a carload commodity rate of \$2.00 and a minimum weight per carload of 38,000 pounds but the total weight of article "A" in this shipment is only 35,000 pounds. Nevertheless, under this formula you find it cheaper to pay for an entire carload of 38,000 pounds of article "A" in order to secure the carload rate; and you load the balance of the articles in the same car paying for them as the "class" or "commodity" LCL rate, whichever is cheaper and available.

Not many new carload rates will have to be established in order to provide a general situation of parity for Pacific Coast ship-

pers, according to Mr. Osborne, who has worked closely with CMA on its transportation program.

Most of the mixed carloads are assembled by freight forwarders, rather than by individual shippers. The spread between less carload and carload rail rates makes it possible for forwarders to earn a profit while also affording the shipper a better rate than his individual volume would otherwise earn. So it is anticipated that the forwarders will support Application No. 3013, because it will open up new eastbound business for them.

There are also cooperative organizations known as shipper consolidators, who consolidate the freight of their own members, on a non-profit basis. Wholesalers, distributors and manufacturers' agents have been the principal western beneficiaries of Rule 10 westbound, because it has enabled them to bring eastern manufactured products into Pacific Coast territory with more regularity and economy. Many members of the CMA are enjoying this privilege and it provides, essentially, the basis for these efforts to have similar tariff arrangements established, eastbound.

Few Have Advantage

Pacific Coast machinery manufacturers are among the few firms who have been able to take advantage of a similar mixture arrangement, eastbound, for the reason that the commodity rate on machinery happens to include various other similar commodities in the same tariff item.

Some opposition to Application 3013 may emanate from eastbound shippers of Pacific Coast food products. Their position may be affected because there may no longer be such a wide differential in favor of a full carload which has made the carload purchase more attractive.

Manufacturers on the Pacific Coast have been handicapped, too, by lack of information as to what is transpiring in regard to western freight rates. To remedy this, CMA is urging adoption of public docket procedure by the rail carriers serving the coast for all applications involving changes in rates, rules and regulations affecting Mountain-Pacific freight traffic.

The request to equalize the application of Rule 10 in both directions, transcontinental, is the first step toward eventual changes, to many of which the railroads will undoubtedly agree, namely, establishment of individual eastbound LCL and carload rates on manufactured products, no higher than those applicable on the same products, westbound.

While it may be comparatively easy to obtain changes in freight rates applying to the Mississippi River and beyond, more difficult adjustments lie ahead in the equidistant areas of the Middle West. In very few cases is the eastbound rate from the coast to the intermediate territory as low as the rates from competitive eastern producing areas.

Silverware Workers Seek Jobs In Spokane

POSSIBILITIES of the West having its own silverware fabricating industry (see *Western Industry*, June '46, pages 33-34) continue to look good.

Specific evidence that Frank Lilly, Spokane mining statistician and apparent prime mover in the plan for producing silver flatware in the West, means business may be found in the fact that he is already buying up silver to assure himself of a future supply.

At any rate that is one deduction by a staff reporter who, asking about a heavy sag in one of Lilly's file drawers, was shown the cause—an 1154-ounce bar of the precious metal which the statistician had stashed there before taking it down to his vaults.

That gives Lilly a leg up on a good part of his established Eastern competition, if one is to credit what he reads about Eastern fabricators' rapidly vanishing supplies of the raw material. Judging from the hue and cry in the daily press, newlyweds throughout the length and breadth of America are going to be in a desperate position for traditional wedding gifts, and friends and relatives will have to rely on ceramics, glassware, etc., in order to give brides the proper send-off.

Meanwhile, established Eastern producers, questioned about their reactions to the Spokane venture, run the whole gamut in their replies from a plain statement that

they will always welcome honest competition to a bare noncommittal "Nothing to say."

On the more positive side of the picture, Lilly reports a minor flood of job inquiries from a substantial number of people in the area all of whom claim experience in flatware fabrication. Out of this group he expects to get a nucleus of skilled workers able to start operations as soon as the plant is ready, supposedly by November.

He also expects to make arrangements with his refinery source so that it will leave approximately ten per cent of the silver ore's copper content in the metal when it comes from the refinery. Such an arrangement will save him the step other producers must take in adding copper to silver .999 fine in order to convert it into sterling.

So far plans are to begin with production of simpler pieces, later to branch out into the more complex varieties.

Effect of the end of OPA ceiling prices on the silver market has meant an influx of Mexican metal to the United States. Though the House of Representatives last month rejected the Senate's proposal for 90.3 cent silver, prices being paid for foreign silver are running above that price.

Such a condition of rising raw material prices Lilly doesn't view with alarm. Unlike his prospective competitors he seems to observe the phenomenon with pleasure.

• Whether a silverware fabricating industry gets started in Spokane this fall, as Frank Lilly hopes (see above), there will continue to be plenty of activity in another Spokane plant that takes in lots of silver for its commodities such as bacon (see below). At the Carstens Packing Company production line women slice and prepare bacon for packing. Woman at right weighs out strips. —Photo courtesy Spokane's *Spokesman-Review*.





• Workers are anxious to advance themselves and it pays to teach them. That's the experience of the Lindeman Power Equipment Company in operating its night school for the past two years. Teachers from the company's engineering staff are paid double time rates.

PLANT SCHOOL—Workers Like It

COMPANY instruction in higher mathematics and related subjects pays off through giving shop workers a better understanding of engineering department functions, increasing coordination and improving production efficiency.

That is the experience of Lindeman Power Equipment Company, which has recently completed its second year of conducting a night school for workers.

Several unusual features characterize the company's educational program.

Its teachers, for example, are not hired from the outside but are taken exclusively from the company engineering department. Thus the men in the shop are able to learn under the men with whom they come in daily contact. An obvious result of this policy is that inevitable differences between teaching and practice are cut to the minimum.

Unusual Features

Another unusual feature is that all classes are held in rooms of the engineering department, instead of the usual classroom, a condition which still further tends to make instruction offered of the most practical kind.

Hours of instruction are from seven to nine o'clock at night, two nights a week, extending over a period of 15 weeks. Subjects taught, in addition to higher mathe-

By CURTIS V. EDWARDS
Chief Engineer
Lindeman Power Equipment Company
Yakima, Washington

matics, are shop layout, blue print reading and shop mathematics.

Because the entire program assures students of getting the type of knowledge that will be of the greatest benefit to them in their plant jobs, attendance at the school has been high. Furthermore, during the two years the school has been installed, interest of the students in courses taken has maintained itself at a high level.

As in all schools, however, advent of spring has resulted in the usual seasonal decline of interest in learning with the result that the company has determined on a program of fall and winter instruction for the future, omitting the spring and summer months when fishing and gardening have their maximum attraction.

Studies of educational backgrounds of the men taking the courses show those of a high school education to be in a majority. A few college men, however, and more than a sprinkling of those with only a grade school education also sign up for instruction. Positions held in the plant by the student body include machinists, tool makers, draftsmen, assemblymen and general laborers.

Manifestly, one objective of those tak-

ing courses is to improve their positions in the plant as well as to better themselves. They attend on their own time.

Policy of plant management towards teachers is another important distinguishing feature. Unlike most teachers in either private or public schools, these are well paid. Policy of the company in this respect is to pay teachers, not at straight time rates, nor at time and a half, but at double time for the position they regularly fill in the plant.

Teacher Pay

By such a pay policy the company's management feels not only that it is under no obligation to members of the teaching staff, but that it can direct the functions of the school with as much authority as any other part of the company's operations.

In addition to indicated improvements in worker efficiency, the company's experience with the school during the past two years shows that an extension of the educational program should result in increasing betterments for some time before the peak of what may be expected can be reached.

Though the program represents a substantial dollar outlay, continuing improvements in its administration, coupled with benefits already derived, prove that its continuation and expansion is a wise course to follow.

HH Priorities, UNRRA Set-Asides Hit West

WASHINGTON, D.C.—All signs here in the capital seem to point to a growing exasperation up and down the Pacific Slope about housing. We are told the situation is worst (and growing still worse) in Southern California, particularly in the Los Angeles area.

Housing also is a capital headache in Seattle. That city, we are told, needs 10,000 houses, and the 2,300 now under way there are stymied by various NHA blockades. A curious aspect, reported here, is inability to get lumber there, because profits, and other considerations involved, impel industries to ship it away. Seattle also has much trouble in getting nails, hardware and building supplies and equipment.

In Los Angeles they have sufficient lumber, apparently, but no nails. Also, we are told, the proportion of HH priorities issued for housing has been out of balance. Capital figures seem to indicate that California builders, mainly in the Los Angeles area, have 60,000 priority certificates, while the whole state of Washington has less than 7,000, which the Seattle people believe is not a fair ration. We do not hear so much about the housing troubles of other Western communities.

W. D. B. Dodson, an outstanding figure in the national capital in connection with the development of the large natural resources adjoining the Portland area, apparently has been making good headway in converting the industrial heathen of the East to the idea of building plants in Portland, but the other day the cautious folk who run the Portland Chamber of Commerce called him back home until all these congressional muddles are clarified.

Wizard Wyatt

NHA Wizard Wyatt has more than \$400,000,000 to hand out as incentive money, but in all these months he has been able to induce suppliers, manufacturers, and others, to accept less than \$5,000,000. They need materials, however, not incentives; but materials, instead of increasing, constantly diminish. Lead, zinc, tin, copper, and many other basic necessities are short, showing no immediate signs of increase.

Some stockpiles are so low that the situation is dangerous nationally in relation to potential defense needs. Over-all short-

By ARNOLD KRUCKMAN

ages are amazing, more grave for being global, not simply local or domestic.

There is a growing school of thought here that this unbalance of supplies should be thoroughly and clearly understood in order that we may know what to do about problems such as the housing muddle.

Meanwhile, the international aspect makes one think about the export problems coming to the front vigorously and noisily in the capital. It is inevitable you will hear more out there about UNRRA and its prophet, Fiorello La Guardia. There are many signs that he is developing his idea of UNRRA as an aid to selected private exporters, as well as to those presumably perishing of hunger in foreign parts. The situation particularly hits those on the West Coast because much of the evil about which we are told exists in Asia.

Actual Experience

There is, for instance, an American industry which has painstakingly built up over a period of 50 years a great business in a basic article of food which has improved the health of the Chinese. It has spent large sums of money in teaching the Chinese the reasons for prophylactic precautions in handling the food, and sanitation in handling its containers. Its profits and its missionary work went hand in hand.

Now with UNRRA in the field, securing its supplies by the enforced "set-aside," purchased at a government imposed minimum, this industry cannot secure export licenses. Yet its agents witness distribution of UNRRA supplies through Chinese local relief agencies, which are reported to ignore prophylactic and sanitary precautions, and so bring into disrepute the food through probably starting distressing diseases. Thus within a few months, the work of five decades can be ruined.

It also hits the Coast in the alleged muddling misuse of canned fruits, vegetables, fish, and other staples, originating in Western plants. Producers and packers have spent time and money in establishing a hard-won respect among Asiatics for quality of merchandise packed under their brands. The same brands go out in UNRRA shipments, but they are not properly warehoused, according to report, and are not properly protected, by the relief and distributing organizations which handle the UNRRA stuff in each country.

One of the best-informed writers at the Nation's Capital, Arnold Kruckman, presents each month authoritative comments on political developments and their practical application to industry of the West. Any reader who wishes additional information may write to him directly, using business letterhead, at 1120 Vermont Avenue, N.W., Washington, D.C. Inquiries will be answered free of charge. You also are invited to contact him personally in Washington. Copies of pending congressional bills may also be obtained free of charge.

UNRRA, most of whose inventories come from the United States, is forbidden to make local or national distribution. For this reason there has been such scandalous misuse of UNRRA stuff in the Balkans, in the Near East, and in Asia. The American export people took it on the chin without audible complaint for many months; now, however, exporters of the Pacific Coast increasingly are coming to Washington to demand that Congress do something. But Congress has been so bedevilled with larger devils, such as OPA, that it has brushed off the Westerners.

The brush-off, however, no longer appears to work. The Westerners are thoroughly angry, especially since British exporters are gleefully publishing pictures of the delivery of huge shipments by their private firms in Singapore, Shanghai, and other good trade spots of the world, including South America. Also, much exasperation was stirred recently when American farm machinery manufacturers found the United States could not produce \$90,000,000 worth of equipment ordered by UNRRA because the industry had not been tooled up for the job. On the other hand, UNRRA announced, Australian manufacturers were all tooled up and would immediately undertake the \$90,000,000 job.

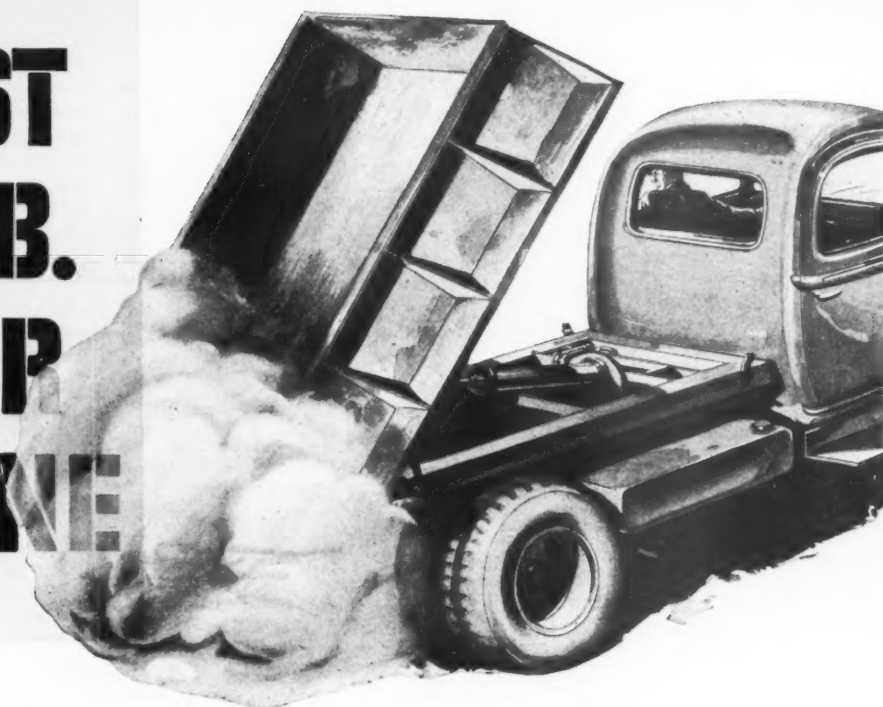
Exporters Barred

Why our exporters are barred by their own government through denial of export permits, and are stymied by UNRRA operations, is a mystery Congress must solve, and solve soon. The problem will undoubtedly be put up to most members running for re-election in the West. There is a feeling that the business community of the West should put them very definitely on the spot.

Surplus comes into the Western picture in many ways. The export phase may be illustrated by the experience of the people in Seattle who had 220 water heaters, eagerly wanted in China, but who could

(Continued on page 52)

DUST F.O.B. YOUR ENGINE



**Nature delivers dust—at a rate of
up to 4 tons per square mile in 24 hours
—to make "sandpaper" in your engine oil**

That 4-ton figure is a city dust-fall measurement. Imagine what it can be outside the area of pavements, with working equipment churning up its own clouds of those abrasive particles!

Add the contamination of unburned gasoline from over-choking or faulty automatic chokes...the condensation of water...and the washing-down of worn particles from the engine itself. That's why engine oil must be changed regularly.

Next time you change oil, put new

Golden Shell into the crankcase. It contains a new oxidation inhibitor that gives it high resistance to oxidation—the forerunner of sludge. Because sludge gums up oil lines, a sludge-free crankcase will mean better lubrication . . . longer engine life.

And without sludge to clog it, your oil filter will be able to trap more of those abrasive dust particles in the 8000 gallons of air your engine "inhales" for each gallon of gasoline it burns. So specify new Golden Shell with oxidation inhibitor.

WITH OXIDATION INHIBITOR
Golden Shell

MOTOR OIL ... 25¢ PER QUART

**TAX
EXTRA**



KRUCKMAN (Cont'd from page 50)

not get export licenses because Wyatt's people would not give clearance. The Wyatt people insisted they needed the heaters for housing that might shortly come into existence. Meanwhile, the British and others have plenty of heaters for China.

Rubber Problem

There also is the problem of rubber. There are many export demands for components, in assemblies, made of rubber. We have recently agreed to buy rubber from the British, and the satellite Dutch, for 23c a pound, when our synthetic rubber plants, now idle, could make the product at 2c a pound less. War Assets Administration, at this writing, is suspended in one of those cataleptic unanimitations which make it difficult to determine whether they will quickly dispose of the synthetic plants or leave them dormant.

Of course, during the suspense, there is no production, which results in a decided scarcity of material to make rubber components.

An example of the indescribable surplus muddle comes from the Pacific Northwest, where it was possible to complete some housing provided 175,000 pounds of copper wire could be secured. That was available only from surplus stocks. Naturally, veterans had first claim. The story is that a group of smart scrap dealers legally devised a method of acquiring the surplus copper wire from veterans who could exercise their preference. Obviously, there was no wire left for the desperate housing people.

Arizona Resentment

From Arizona we get word that Gov. Sidney P. Osborn has suggested a Congressional investigation into the manner in which the surplus in that State has been administered by our friend Serge F. Ballif Jr., the Regional Director at Los Angeles, who issued that historic bulletin about the FBI check-up in Southern California.

The Arizonians publicly charge that surplus materials located in that State are offered in California before the Arizonians even know there is any surplus. There also is under scrutiny the disposition of the huge quantity of surplus left at Rivers Relocation Centers in Arizona. Governor Osborn as well as former WAA district sales manager at Phoenix, George W. Miller, wonder how the Indians in the area obtained surplus, why the Relocation Centers are reported utterly stripped of the surplus, how it was sold, if actually sold. The Arizonians will tell you that last fall \$225,000 worth of desirable thin aluminum sheets were sold to California buyers, without fanfare, while the thick stuff, little in demand, was left in the Goodyear factory near Phoenix.

Apparently the West Slope is confronted with freight rates even higher than those recently imposed by the Interstate

Commerce Commission when it permitted the railroads of the nation an interim increase to offset the wage increases. Further increases were suggested by the interim ruling.

The word here is that the next installment will include truck and water carriers, which also face increased wage and material costs. Hearings are scheduled by ICC in the fall, and it is anybody's guess what the next hoist will be.

It is suggested that shippers investigate the "in-transit" schedules offered by rail-

roads, which enable shippers to stop a car in transit for partial unloading, and to consolidate several lots consigned to customers at different places, with lower carload rates for the full weight. Goods also may be stored in transit. They are shipped to a point between origin and destination, and upon payment of a transit charge, may be reshipped at the rate for the full distance. Raw materials may be shipped under similar privileges while the shipment is halted for milling, refining, storage, or other processing or handling.

Alcoa's Vancouver Production Study

By DAVID H. BEETEM
Chief Metallurgist, Vancouver Works
Aluminum Company of America

A DEPARTMENT whose function is essentially research and development, and whose personnel can give their entire time to study of product improvements without being distracted by constantly shifting problems of operation, has been created at the Vancouver Works of the Aluminum Company of America.

Known as the Metallurgical Department, it is a further expansion of present and past efforts to create a better, more diversified and more economical product.

Production of a salable article or commodity involves the bringing together of man power, material, equipment, processes and power. Problems arising from this combination are peculiar to each industry, yet curiously alike as to fundamentals.

Opportunity for improvement, and, or, economy in a plant product as to quantity, quality, appearance, and sales appeal is present in all industrial plants. Here is the field of the Metallurgical Department. Competition is ever present; today is no exception.

Establishing a research group might well be seriously considered in all industrial plants, however small, because the present day operating staff is of necessity fully engrossed with production, maintenance, and personnel problems.

Engineers devoting full time to research and development must be thoroughly acquainted with the plant processes, its equipment, its raw materials, its finished products, and its personnel. They must not be easily discouraged, their vision may be ahead of the market—their ideas may be ahead of the tools required to make an idea workable.

They may not have a profitable idea for an extended period of time—again they may come up with a new development that will pay the cost of the research group for years. They must have leisure to imagine, to mentally create new ideas or to rearrange

old ideas. They should not be overburdened with routine, yet they should keep in close touch with plant operations, technical data, cost data, and plant personnel.

The field of a research department could well begin with the consideration of the incoming material. For example:

(1) Is the material of such a quality that desirable products can be manufactured from it, or is its quality better than is necessary which thus incurs an unnecessary expense?

(2) Is the material on arrival at the plant handled in an adequate fashion in order to prevent loss in material or time or from contamination?

(3) Are the processes through which the materials flow of modern design, of high efficiency, and guarded in order to prevent loss in quality or quantity?

(4) Can the work be made easier or more pleasant?

(5) Is the attitude of the foreman and hourly workers passive or active toward a better or a more economical product? The tendency of most routine workers is to resist change. Experimental work can often be largely lost unless all parties involved are interested and observant.

(6) Is there a spirit of competition present in the plant? To compete is an instinctive American characteristic. This is amply demonstrated in the motor industry with benefits to the entire nation.

Utilization of waste products is doubtless one of the most promising fields for research work. The history of industry is crowded with examples of the waste products of one generation being converted into useful products for the next generation.

This is a subject that is tremendously important from an economic point of view. Metal resources are being rapidly depleted.

To conserve, to convert, to rehabilitate, to renovate, to originate, these are the fundamental "musts" of the research group. Research involves time, ingenuity, knowledge, imagination, observation, and—infinite patience.

WESTERNERS AT WORK...

Arizona

They looked to the Southwest—**Milton G. Sanders**, Phoenix, v.p. of Central Arizona Light & Power Co., was elected pres. of Pacific Coast Electric Assn. at its recent meeting.

New administrator — **Edgar Hansen**, Phoenix, is new district mgr., CPA, succeeding **Louis A. Myers**, resigned. . . . **L. L. Stewart, Jr.**, is regional representative of WAA for central and northern Arizona. . . .

W. H. Loerpabel, recently named mgr. of mining dept. of American Smelting and Refining Company, Tucson, has been transferred to New York. . . . **Darwin J. Pope**, with Mexican mining department of the company since 1924, moves up to manager of the mining dept.

California

Now chairman of board—**James J. Cosgrove**, v.p. and gen. counsel for Continental Oil Co., is chairman of the board as well. . . . **Tallant H. Ransome** of Ransome Co., Emeryville has just been elected a member of the national board of directors of the Liquefied Petroleum Gas Association. . . .

Cosmopolitan — **H. J. Brunnier**, San Francisco, pres. of American Automobile Assn., is enroute to Paris to attend general assembly of Association Internationale des Automobile Clubs Reconnus. . . .

Walter H. Evans, v.p. Sacramento Northern Railway, became gen. mgr. of the road July 1, succeeding **J. B. Rowray**, retiring. . . .

Plant mgr. becomes Western division mgr.—**J. J. Kral**, mgr. of the Oakland plant of UARCO, Inc., has been elevated to Western division manager with charge of all company operations. Offices will be in Oakland. . . . **T. A. Hynsen** is Western division sales mgr. for the same concern. . . .

F. W. Robinson, senior v.p. and member of board of Union Pacific railroad, who has held positions at both San Francisco and Salt Lake City earlier, retired July 1. . . . He is succeeded by **Ambrose J. Seitz**, asst. v.p. for traffic, who moves up to the post. . . .

Clifford T. Butler has been appointed supt. of the Hercules, Cal., plant of Hercules Powder Co., succeeding **Leroy P. Hall**, resigned. Butler transfers from job as supt. of the Hercules plant at Bessemer, Ala. . . .

Asst. to the pres.—That's the new post to which **Rene Blanquies** has been appointed by **Theodore A. White**, pres. of Sierra Candy Co., San Francisco firm. . . .

State Board of Pilot Commissioners have a new member—**Captain C. F. May**,

pres. of the Masters, Mates & Pilots Assn., succeeding the late **Captain Andrew Townsend**. . . .

A mechanic 25 years ago, **Ross Miller** has just been named mgr. of the Pacific Coast factory of Gar Wood Industries, Inc., in San Francisco. . . . He comes from the mgrship of Philadelphia branch (the hoist and body division). . . .

California's State Chamber of Commerce small harbor development committee has as its chairman **Hubbard C. Howe**, who is active in the Newport Beach harbor development, and **Charles A. Winslow**, pres. Winslow Engineering Co., Oakland, as vice-chairman. . . .

New vice-presidents of Link-Belt Co.'s Pacific division are **John F. Strott**, with headquarters at the San Francisco plant, and **Fred E. Miick**, with headquarters at the Los Angeles plant. . . . Strott has charge of all sales effort in West Coast states, while Miick is manager of the Los Angeles plant territory.

He likes the job—**Lt. Col. James A. Sullivan** will continue to head the S. F. Port of Embarkation public relations division after his final separation from service. He has been in charge of activities since August, 1942.

The guiding hand—**George C. Ford**, acting division mgr. and works mgr. of Consolidated Vultee Aircraft Corp.'s Vultee Field Division, Downey, has been appointed division manager. Besides a fighter project the Downey plant is building tooling and assemblies as well as engaging in experimental projects. . . .

He keeps to the sky—**John F. Davidson**, mgr. of trans-Atlantic operations for American Airlines, is the new operations mgr. for Santa Fe Skyway, Inc. . . .

Loren S. Bush, San Francisco, was the only Westerner chosen as an officer or director of the National Fire Protection Assn. at its recent meeting — he's a director. . . .

Reconversion—After five years' service as a colonel, **Raynor E. Anderson** is back with the Oakland Chamber of Commerce. He is in charge of the new industrial survey of Alameda County.

Major Gen. **Homer M. Groninger** embarked — **Brig. Gen. Neal H. McKay**, Texas-born Army supply expert, is now in command of the San Francisco Port of Embarkation, succeeding **Maj. Gen. Groninger** who will be retired shortly. . . . He will have under his supervision port installations at Fort Mason, Oakland Army Base and Camp Stoneman. . . .

Westerner gets election — **George W. Aljian**, director of purchasing and packaging for California & Hawaiian Sugar

Refining Corp., Ltd., is pres. of Natl. Assn. of Purchasing Agents for 1946-1947. Another Westerner gains national recognition. . . . A fine showing!

David M. Salsbury has been appointed exec. v.p. of the Westinghouse Electric Supply Co. Salsbury is well-known in the West because of affiliations with electric companies in Oakland and Fresno as well as serving as branch mgr. at Salt Lake City and mgr. of North Pacific district with hdqtrs. at Seattle.

John Keilbach, roll shop supt. at Columbia Steel Co., has accepted a new position in the Brazilian Govt.'s new steel plant at Volta Redondo, 75 miles from Rio de Janeiro. He will be roll designer and roll shop supt. at the Brazilian installation.

The Lucky Thirteen—**Carl J. Moroney** has become pres. of Spreckles Sugar Co. after 13 years as v.p. and gen. mgr. . . . **S. B. Mosher**, pres. of Signal Oil & Gas Co., is head of National Skyway Freight Corp., Los Angeles. . . . **Frank B. Stratton**, asst. to freight traffic mgr., succeeds **James W. Grace** as industrial commissioner, Western Pacific Railroad. . . .

Karl Herzog has been named treas. of Cinecolor, Inc. . . . Officers of the new Mineral Wool Insulations Co. are **H. H. Head**, formerly with staff of Kaiser Co., Inc.; **Charles W. Hawthorne**, formerly with Johns-Manville; **Richard Gray** and **G. T. Sauer**, former treas. of W. A. Bechtel Co.

E. J. White, Western Frozen Foods Company, elected pres. Western Frozen Food Processors Assn. Other officers include **J. R. Braden**, Richmond-Chase Co., vice pres.; **Fred L. Kulper**, Santa Clara Frosted Foods Co., treas.

Colorado

Returning warrior—Recently discharged from the Air Forces, **Don Alexander, Jr.** has been elected v.p. of the Alexander Film Co. and the AleXitE Engineering Co., a subsidiary, and is assistant to pres., **J. Don Alexander**, at Colorado Springs. . . .

No more "Striped Pants" Diplomacy—**Charles U. Bay**, head of the Bay Petroleum Co. of Denver, has been named by President Truman as Ambassador to Norway, Bay's native land. He declared his assignment is "a challenge to a man's business ability" and predicted that "the days of striped-pants diplomacy are over."

G. G. Brooder, asst. to the v.p. of Western Air Lines, stationed at Denver, has been named asst. to the pres., **William A. Coulter**. He will remain in Denver.

Montana

G. S. Walton has been appointed information development agent for the Great

WESTERNERS AT WORK...

Northern Railway's department of agricultural and mineral development. . . . **Fred C. Platt**, with many years of intimate knowledge of the Montana oil industry, has been appointed chief state oil and gas supervisor, with hqtrs. at Billings.

Nevada

Goes into private business — **E. L. Stephenson**, supervising geophysics engineer with the U. S. Bureau of Mines, Reno, has resigned to engage in private practice. He has established his offices in Reno.

Oregon

Leaves Co-op—**James C. Coon**, former asst. mgr. of Pacific Wool Growers Co-Operative, Portland, is v.p. and gen. mgr. of Western Wool Storage Co., Portland. . . . **Irving Wiederhorn** is mgr. of Glaser Bros. Portland branch. . . . **E. C. Curtis** is dist. mgr. for apparatus dept. of General Electric Co., at Portland. . . .

Paris in the Spring—**S. E. Schultz**, chief engineer of the Bonneville Administration, is one of two dept. delegates named by Secretary of Interior **J. A. Krug** to international conference on electric research and development in Paris the last of July.

Makes his own job—**John Walker**, who has been making special studies of production and distribution of Fisher Flouring Mills Co., has been named head of a new packaged products division. . . . **Kenneth R. Fisher**, formerly asst. sales mgr. of the concern, is new treas. . . . Walker came to Fisher from P. Duff & Sons, Inc., maker of Duff mixes. . . .

Jay A. Sly, Vancouver district mgr. for Northwestern Electric since 1936, has been transferred to Portland to serve as asst. to gen. supt. . . . **E. F. Pearson**, asst. gen. mgr. in charge of the company's Washington district, will succeed him at Vancouver.

Ralph E. Foss is supt. of operations for Portland Traction Co. . . . **Carl L. Schenker** has been named Pacific Northwest division and export mgr. at Portland for Pillsbury Mills, Inc., succeeding **A. M. Scott**, retired. . . .

New general manager—**Albert Bauer** has been promoted to gen. mgr. of all Henry J. Kaiser operations in the Portland area. He was asst. gen. mgr. of Oregon Shipbuilding Corp. during the war. . . . **Russell Hoffman** is gen. supt. of Swan Island ship repair in add. to gen. supt. of Oregon Shipbuilding. . . .

Utah

C. E. Johnson is pres. of the Utah Motor Transport Assn. Assisting him are **Nick Galanis**, v.p.; **I. D. Thompson**, treas.

Succeeding **Claude P. Heiner**, vice pres. Utah Fuel Co., as pres. of the Utah Coal

Operators is **A. B. Foulger**, gen. mgr. Lion Coal Corp. . . . Other newly elected officers include **Walter F. Clarke**, gen. mgr., Independent Coal and Coke Co., and **B. P. Manley**, re-elected exec. sec.

Washington

Now he's making paper — **Frank S. Baker**, publisher of the Tacoma News Tribune, elected pres. of West Tacoma Newsprint Co., which some eight Coast newspapers have formed to get newsprint when they need it. . . . **R. P. Newland** named district engineer at Spokane for Portland Cement Assn., succeeding **S. Carl Smithwick**, resigned. . . .

He taught it—**Gilbert L. Gifford**, asst. prof. of transportation at Univ. of Wash. since 1942, has been appointed traffic manager of West Coast Airlines. . . . **Robert Story** elected pres. of Pacific Northwest Chapter of American Marketing Assn., succeeding **Roy Marshall**, Seattle ad. exec.

J. Fred Zumdieck, labor relations manager in Seattle for Alaska Steamship Co., succeeds **W. E. Brown** as supt. His asst. is **G. S. Duryea**, dist. supt. in S. F. for past two years. Brown becomes gen. freight and passenger agent for company in Seattle.

Members of the Pacific Logging Congress chose **Everett G. Griggs**, Tacoma, as pres.; **Emmitt Aston**, Omak, v.p.; and **Robert F. Dwyer**, Portland, treas.

First time for the west — **Thomas J. Bannan**, pres. and gen. mgr. of Western Gear Works, with plants in Seattle and Los Angeles, as well as Pacific Gear & Tool Works, of San Francisco, an associate plant, was elected pres. of the American Gear Manufacturers Association at its annual convention. It is the first time the AGMA has chosen a Westerner for that post. . . . Congratulations!

Personnel changes — The Seattle exec. staff of the Chicago, Milwaukee, St. Paul & Pacific R. R. has changed with naming of **J. P. Kiley**, asst. gen. mgr. of road's lines East to become asst. to the pres. with headquarters in Seattle. He fills post of **J. N. Davis** who retires, though Davis remains as head of the law department of the Western lines. **L. F. Donald**, gen. mgr. of lines West in Seattle, goes to Chicago as gen. mgr. of lines East, succeeding **O. N. Marstad**. **L. E. Sorensen**, gen. asst. to v.p., Chicago, becomes gen. mgr. of lines West in Seattle.

Wyoming

J. P. (Joe) Larson, chief clerk in office of Wyoming division supt. of Union Pacific, has been promoted to asst. to gen. mgr. of Eastern district, at Omaha. . . . He will be succeeded by **Eli W. Hansen**, asst. chief clerk.

Clarke upped by Pure Oil—**H. C. O. Clarke**, mgr. of the Rocky Mountain division of Pure Oil Co., Worland, has been named manager of the Illinois division. . . . He will be succeeded by **Robert McIlvain** of Ft. Worth, Texas.

Associations Elect

United Metal Trades Assn. of Oregon elected **L. C. Anderson**, sec.-mgr. of Portland Iron Works, as new pres. succeeding **Robert L. McCulloch**, McCulloch & Sons; **Edward G. Huffschtmidt**, Western Foundry Co. and Industrial Iron Works, v.p.; **John L. Stevenson**, Steel Tank & Pipe Co. div. of American Pipe & Construction Co., treas. . . .

The Mountain States Association elected **Willard S. Thompson**, Butte, Mont., pres.; **Earl W. Murphy**, Boise, Ida., retiring pres. director at large; **J. P. Murphy**, Albuquerque, N. M., 1st v.p.; and **Paul Nash**, Pocatello, Ida., 2nd v.p. **F. W. Reich**, Boulder, Colo., was reelected sec.-treas.

Purchasing Agents Assn. of Northern California—Elected as president for the fiscal year beginning July 1, **Lawrence E. Hobart**, deputy state purchasing agent in San Francisco. Other officers: **Roscoe R. Bush**, Pacific Coast Aggregates, Inc., first v.p.; **Arthur J. Melka**, Hydraulic Dredging Co., second v.p.; **Charles H. Warner**, General Electric Co., sec.; **Samuel T. Dickey**, Castle & Cooke, Ltd., treas.

Westerners named to the National Petroleum Council to advise Secretary of the Interior **Krug** and the oil and gas division on oil and gas matters are:

Californians: **Leroy Edwards**, pres., Southern California Gas Company, Los Angeles; **Richard Fenton**, exec. v.p., California Stripper Wells Assn., Los Angeles; **R. G. Follis**, pres. Standard Oil Company of California, San Francisco; **W. F. Humphrey**, pres., Tidewater Associated Oil Company, San Francisco; **Allen A. Jergins**, pres., San Joaquin Valley Oil Producers Association, Long Beach; **Carl A. Johnson**, pres., Independent Refiners Assn. of California, Inc., Los Angeles; **Charles S. Jones**, pres., Richfield Oil Corporation, Los Angeles; **Ralph Lloyd**, pres., Western Oil & Gas Assn., Los Angeles; **S. B. Mosher**, pres., Signal Oil & Gas Company, Los Angeles; **Reese H. Taylor**, pres., Union Oil Co. of California, Los Angeles; **W. C. Whaley**, pres., Oil Producers Agency of California, Los Angeles;

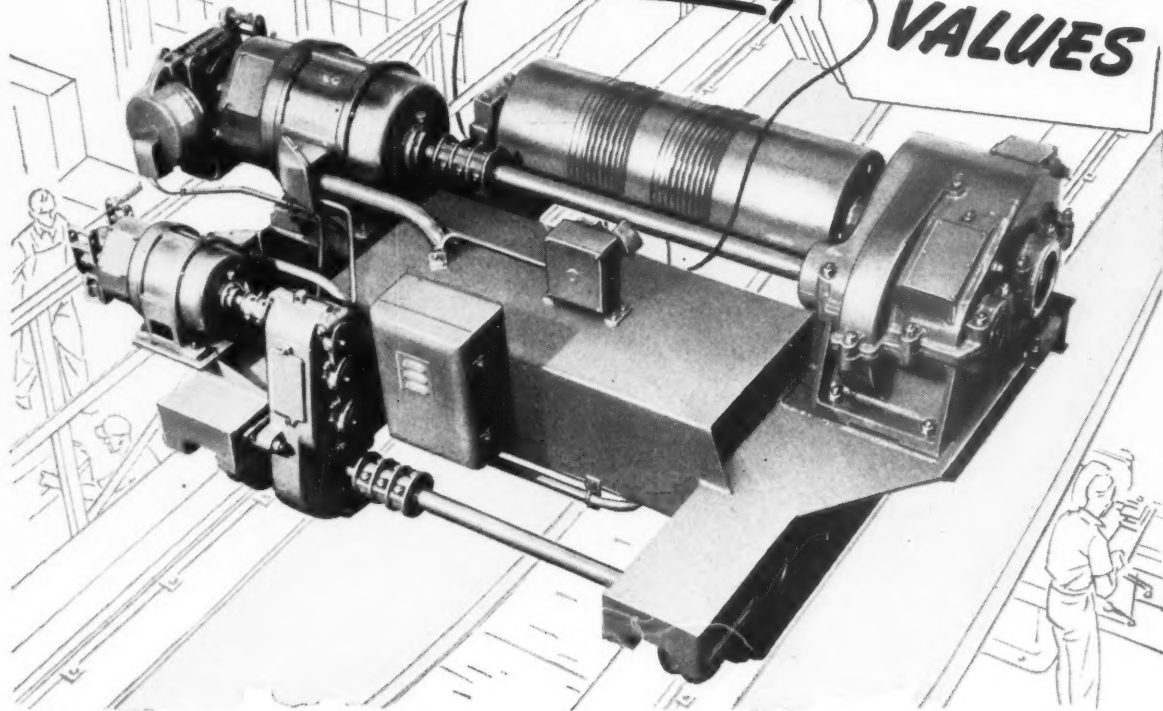
Coloradans: **W. H. Ferguson**, executive v.p. of the Continental Oil Company, **R. S. Shannon**, pres. of the Pioneer Oil Corporation, and **M. H. Robineau**, pres. of the Frontier Refining Co., all of Denver;

And Utahans **Henry D. Moyle**, v.p. of the Wasatch Oil Refining Company of Salt Lake City.

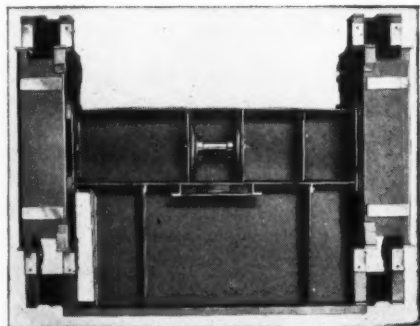
P&H CRANE TROLLEYS

have many

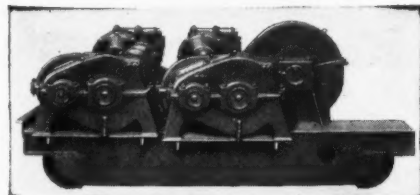
**ADDED
VALUES**



They maintain alignment under most severe operation!



Underside of trolley frame, showing rigid, one-piece construction.



Note the simple mountings of compact, oil-tight gear cases in this P&H trolley view.

With P&H Crane Trolleys you can lift capacity loads at top speeds year after year . . . and never worry about trolley alignment. In P&H's simple, husky, all-welded construction, load girts are welded to box-type end trucks and the whole frame as a unit is accurately machined. This provides perfect alignment and permanent rigidity, which in turn eliminates gearing, shaft and bearing troubles. Other notable advantages built into P&H trolleys include:

A 3-REDUCTION GEAR CASE, mounted on the trolley side, provides oil-tight flood lubrication.

GEARS AND PINIONS HEAT-TREATED to as high as 302 Brinell for shockproof strength and extra wear.

MCB TROLLEY TRUCK AXLES with forged steel wheels insure more dependable service.

Whatever your requirements for overhead crane service, consult P&H . . . America's leading builders.

**ELECTRIC
OVERHEAD CRANES**

P&H

4604 W. National Avenue
Milwaukee 14, Wisconsin

HARNISCHFEGER

CORPORATION

WELDERS • WELDING ELECTRODES • MOTORS **P&H** EXCAVATORS • ELECTRIC CRANES • ARC WELDERS

**ELECTRIC
OVERHEAD CRANES**

4604 W. National Avenue
Milwaukee 14, Wisconsin

HARNISCHFEGER

CORPORATION

WELDERS • WELDING ELECTRODES • MOTORS **P&H** EXCAVATORS • ELECTRIC CRANES • ARC WELDERS

Kaiser Comes Up With Giant 60-Foot, Light Metals Bus

THOUGH Henry J. Kaiser's new 60-foot over-all bus is apparently a sound development, both mechanically and from the point of view of passenger comfort and the numbers of passengers carried, other factors make it questionable as to just how important it will be to highway transportation companies.

These factors fall mainly under the heading of legal restrictions.

Excellent as performance of the bus is—and it takes steep grades and winding roads with all the verve of a well seasoned passenger car—it means very little to those who preside over the wording of state motor vehicle codes.

Despite reports that more and more states are signifying willingness to adopt a standard set of restrictions on such matters as overall lengths of public carriers, very little progress has been made towards standardization. Furthermore, if even only eight of the 48 states insisted on following their own whims in writing regulations, and they were strategically placed, use of the most super super-bus would have to give way to what the law allows.

During the recent war, of course, ways were found of getting around the anarchic condition that confronted transcontinental bus and truck lines, but with the return of peace there has been an accompanying return of former transport conditions with no indication that they will rapidly improve.

Even in California there appears to be considerable doubt as to whether or not this new bus can be used. Kaiser's men insist that everything has been ironed out,

but the state's motor vehicle codes permits only a combination unit (a truck with trailer or tractor with semi-trailer) to be 60 feet long, and forbids single units of more than 35 feet. The Kaiser bus, of monocoque construction, apparently is in the single unit class, but a different interpretation of the law might put it in the other.

Santa Fe Trailways

But regardless of what part the new Kaiser bus plays in transportation it would be unwise to discount Kaiser too heavily as a factor in bus manufacture. It is important, too, to bear in mind that the present model was manufactured for Santa Fe Trailways, and that its announcement was made jointly by the Santa Fe Trail Transportation Company and Kaiser.

Of the new features incorporated in the bus, constructed at the Permanente Metals Corporation plant at Permanente, California, many may prove to be decidedly practical with a substantial demand for them in new carriers. If so, that, plus experience gained in production of the present model, should pay off heavily in the manufacture of other models.

Outstanding features of the bus mechanically are: extensive use of magnesium and aluminum; "torsilastic" spring suspension, or insulation of the body from the wheels on rubber tubes—thus assertedly absorbing all shock and noise from riding; a patented steering system that automatically turns the rear wheels as the front wheels are turned by means of an articulated joint tracking the rear axle with the center axle; monocoque construction for

the coach which means that all parts are built into the main structure; location of the engine, horizontal type, midway between the front and back wheels.

An especially interesting feature of the 275 h.p., six-cylinder Cummins Diesel engine is that both it and the transmission, with four speeds forward and one in reverse, can be removed and replaced by a spare unit with an interruption to bus service of only one hour.

General specifications of the bus are:

Weight, empty, 28,000 lbs.; loaded, 34,000 lbs.; height from road, 11 feet; length, 60 feet; width, 8 feet; inside height, 6 feet 8 inches; seats, double, width, 47 inches; single, 26 inches; wheels, three sets, two singles, front and rear; two pairs of duals in center; front wheel-base length, 258 inches; rear, 282 inches; turning radius, 38 feet.

So far as comfort of passengers is concerned there are also several innovations: with a capacity of 40 passengers, the new model is equipped with two lavatories, extensive baggage compartments, air conditioning equipment and seats that give the passengers 40 inches to relax in rather than the customary 35.

In addition to this, each seat, of the deep foam rubber swivel type, has an individual reading lamp that can be switched off and on at will. So far as lights are concerned, a total of 624 panel lights are controlled by the driver enabling him to give just about any degree of lighting that is desired for the interior. The lights, furthermore, shine for the most part from inside walls and ceiling covered with a beautiful walnut grain paneling or a combination of walnut and light oak paneling.

Greater Seating Space

In event greater seating space is desired accommodations for a total of 63 passengers can be obtained by removal of the lavatories and a reduction of space between the seats from 40 inches to 35, the amount of space allowed in the standard bus.

All magnesium and aluminum plates used in the body construction were made on the job at Permanente shops, so also with hundreds of vital parts from wheels to articulated joint.

The bus was designed by two brothers, V. F. and M. G. Antoine, who have developed patents on many of its features since 1937 when they first began to work on plans for a new type of bus construction.

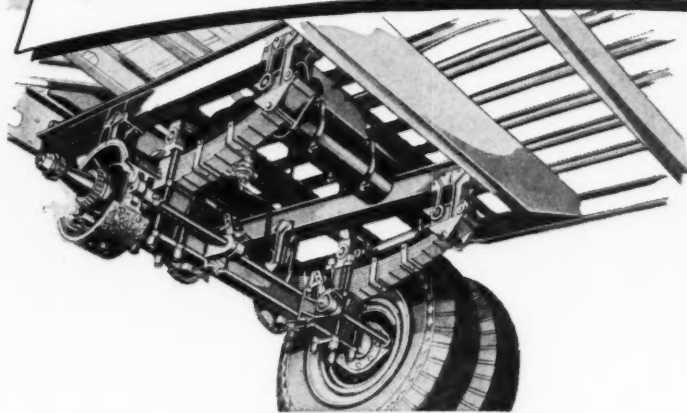
*** With the demand for buses greater than ever before, Henry J. Kaiser's construction of this 60-foot monster for Santa Fe Trailways is a logical development, for regardless of its acceptance it should stimulate orders for still other models of light metals construction. Thus Kaiser would create a market for his magnesium and aluminum output.**



... Fruehauf

Single-Axle Trailer Underconstruction

features "MULTI-RATE" SPRING SUSPENSION



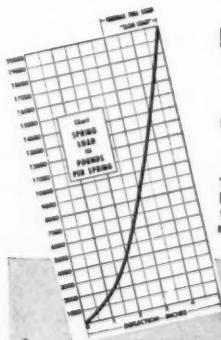
● ROAD-TESTED for 12 months under every load condition! "Multi-rate" Spring Suspension with its patented features insures perfect springing—provides . . .

- Increased axle and spring capacity, with no increase in weight—plus . . .
- An outstanding improvement in Trailer springing.

"Multi-rate" operates on the so-called "slip-end" spring principle—but there the comparison with this type of design stops!

Hangers precision-shaped to accurately control spring length and, thus, the degree of spring stiffness . . . self-lubricating, friction-reducing rollers . . . horizontal radius-rod mounting . . . elimination of helper springs . . . patented "tying" of radius rod direct to axle—all these result in "Multi-rate" providing a rate of spring stiffness in exact ratio to the load carried!

From no-load through the entire range to heavy overload, "Multi-rate" gives you the correct spring action!

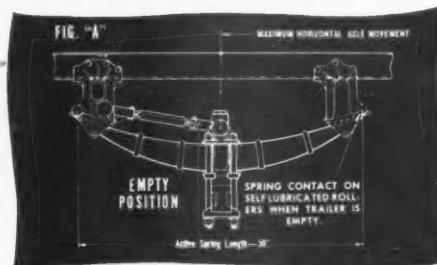


World's Largest Builders of Truck-Trailers
FRUEHAUF TRAILER COMPANY
 Western Manufacturing Plant—Los Angeles

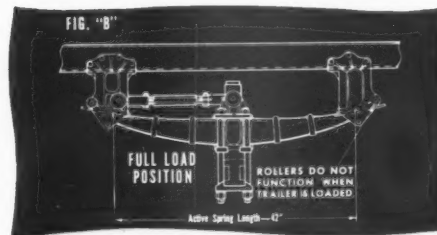
SALES AND SERVICE BRANCHES
 Los Angeles • San Francisco • Portland • Seattle • El Paso
 Phoenix • San Diego • Fresno • Spokane • Billings
 Salt Lake City • Denver

This graph shows how spring deflection increases in correct ratio to the load.

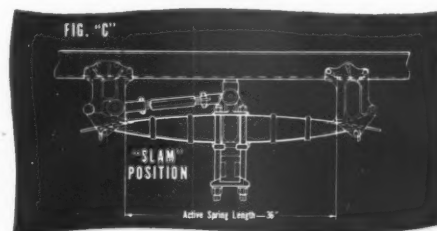
Send today for fully-illustrated folder telling the complete story of this new idea in Trailer springing



A "Multi-rate" in light position. Only the ends of the top spring leaf are in action—bearing on two rollers to minimize friction. A 50" spring—a passenger-car ride!



B As soon as load is applied, the spring makes contact with the hangers—and the contact point moves inward, shortening and stiffening the spring, in correct ratio to the increase in load. Note horizontal radius rod.



C Here the spring has reached its shortest and stiffest position, the rubber block on top of the radius rod contacting the frame. The spring has shortened to 36" active length—a position possible only under shock or the most extreme overload.

Note how the radius-rod design practically eliminates forward or backward movement of the axle—your further assurance of perfect alignment and maximum spring efficiency.

Fruehauf Trailers

"ENGINEERED
 TRANSPORTATION"

REGIONAL REVIEWS

SIERRAS TO THE SEA

SAN FRANCISCO — Along with a flood of press announcements about plans for industrial expansion in this area, concrete evidence of industrial growth appeared last month in the California Labor Statistics Bulletin, published by the state's Department of Industrial Relations. (See page 71.)

The publication reported an increase of 4,600 manufacturing workers in May for the area which includes five counties, over

April's figures of 106,300. The increase was 3,700 greater than that of the next most active industrial district in the state.

During the same month 57 new plants and expansions of 54 others were announced for the five counties and seven additional that complete the San Francisco Bay area region.

Total new plants and expansions for Northern California in May amounted to

71 and 61, respectively, for an overall cost of \$9,695,618.

Tying in with the increased tempo of the region's industrial activity is that of the area's surplus property sales.

For June the San Francisco office of WAA reported sales well in excess of the \$29,000,000 mark. Largest commodity classifications were construction materials, \$6,457,476, and textiles and apparel for \$5,230,536. Approximately 80 per cent of construction material sold went to Federal agencies.

Though no information is available as to percentage of the purchases that will be used in the area, unofficial reports indicate that the greater part will be employed in the Bay Region for relief of its acute housing shortage.

During July additional tonnages of construction materials went on sale with present indications pointing to increased purchases by Federal agencies again. Private industry, even though thirsting at the mouth for a chance to buy, will apparently continue to be held off for some time yet as needs of government and veterans are put first.

Operation Rollback

Meanwhile, as operation rollback gets under way—that's how WAA officials describe return of materials, much of which is being declared surplus, by the armed forces from overseas—the WAA is planning bigger and better sales efforts in the area. Not satisfied with June's sales, officials are shooting at a goal of \$50,000,000 a month during the third quarter of the year.

Aside from having substantial industrial advances the Bay Area is also consolidating its hold on the position of chief transportation center in the West. Latest developments on this score are in air transport.

While the area began the recent war with a total of three airlines serving it, seven now link the region with the rest of the nation and overseas.

Within a few months present air service from the area is to be still further extended. One line, Southwest, will operate a route out of San Francisco that will connect the area with a network of smaller cities in Northern California.

In addition to that, stepped up service between the area and Spokane and Boise will be put into effect within the next 60 days.

How much this increased air activity will mean to the area locally can be seen in the fact that one company alone expects to employ 6,000 additional persons in the area within three to five years.

An Alameda County industrial survey has been completed at a cost of \$20,000 listing every industrial site of two acres or more within incorporated areas, or five acres or more in unincorporated areas. Advantages of sites are enumerated and 19 classifications of information are included.



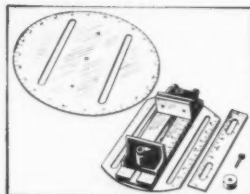
New, Simplified Drill Press Vise, Speeds Up Drilling, Spacing, Milling

Designed to be used with a drill press table having either parallel or radial slots, the New UNI-VISE drill press vise, with guide bar and protractor disc, speeds up and simplifies drilling, layout and spacing work in straight lines, radial or circular. With two movable jaws, vise has universal movement without swinging table or head of drill press to locate exact position of work. Operator thus adjusts work quickly for accurate registration.

Guide Bar facilitates drilling holes in a straight line. With a straight edge and a lineal scale on surface, it registers with lineal scale of vise. Protractor disc, for drilling holes accurately in a circle, has parallel slots registering with parallel slots in base of vise, and a removable means to pivot complete unit on table of drill press.

Accurate work can always best be done by attentive operators. That's why many factories urge workers to chew gum. The chewing action helps relieve monotony—helps keep workers alert, thus aiding them to do a better job with greater ease and safety. And workers can chew Wrigley's Spearmint Gum right on the job—even when hands are busy.

You can get complete information from Spiral Mfg. Corp.
3612-26 N. Kilbourn Ave., Chicago 41, Ill.



AA-83

REGIONAL REVIEWS

TEHACHEPI TO TIJUANA

LOS ANGELES—Grass-roots nourishment of southern California's raw materials production is fattening on supply lines.

Day by day, new indications crop up—such as O'Keefe and Merritt's new rolling mill, and the advent of the H. Kramer Company of Chicago with plans for a new brass mill, first local source of basic brass shapes for machine shops, plumbing manufacturers, and other industrial consumers.

Kaiser has fortified his operations with acquisition of all outstanding rights and interests in the Eagle Iron Mountain iron mine, whose main orebody reportedly covers an area seven miles long and would run the Fontana mill 50 years at present capacities.

Even mighty "Big Steel" has tipped its hat to the newly grown-up industry of the West in a new policy which will mean a bigger share of the supply of sheet steel for Western markets. Allocations will now take into account the war-time and post-war increases in industrial activity and steel consumption in the West.

Other hopeful straws in the wind include a sharp jump in the number of people now working in the manpower-starved structural clay products industry, and brisk resumption of copper mining after earlier strike difficulties.

Of four basic factors now paramount for all industry — materials, manpower, taxation, and Government controls — all but the last show plain signs of improvement. This fact may be taken as far outweighing, in the long run, the momentary question of what will happen to prices—which after all are the product of more fundamental forces.

Construction Up

There seems no stopping of industrial growth, contrary to general expectation of a war's end sharp collapse. Jim Bone of the L. A. Chamber cites figures showing that even in the face of the March construction "freeze," building of new plants plus expansion of old ones between New Year's and July 1 have more than exceeded the total for all 1945.

Even if 1946 doesn't quite double last year's figure, the \$87,000,000 mark at midyear plainly will crowd the all-time high in 1943 of \$110,000,000 — and with peace, not war, as the stimulus.

How greatly retail trade has ballooned in southern California during the war is indicated by a recent study showing that Los Angeles department store sales last year ran but little short of double that city's 1939 figure.

Other indications of activity are the many new faces in small business, the many new products in the making. At the U. S. Dept. of Commerce's small business division, demand is increasing for "technical advisory service," which enlists the aid of various cooperating scientific organizations to find the answers. Questions range through the gamut of physical, chemical, and engineering problems, mostly from makers of brand new products.

Fewer have been coming in lately with tales of financial difficulties, but many want to know where to get ideas for improving their accounting systems or their tax positions, or are interested in data regarding patents.

New "Clearing House"

The job of expediting subcontracting, which the Government sought to do during the war through WPB and SWPC, is being taken up by the Los Angeles Chamber of Commerce. A new "clearing house" will seek to put plants with idle capacity in touch with others who have more work than they can handle. Chamber officials are hopeful of good results in these days of shortages, for often a sub-contractor may know where he can get the materials whose lack has stopped the prime's production line.

Sidelights on the new fields to which Western plants are turning reveal Aireon now moving into production of juke boxes and of railroad and vehicular radio equipment, Solar aircraft well embarked on the manufacturing of stainless steel dairy supplies and automatic film developing equipment.

Consolidated Steel Corporation has undertaken two unusual projects. First is the tentative contract for material to build an aerial passenger tramway up the east slope of Mt. St. Jacinto, permitting vacationers to go in a few moments from the desert near Palm Springs to a wild mountain and lake recreation area hitherto inaccessible. Planned in two lifts pulling 54 tramcars up the slope from 2,700 to 8,500-elevations, it will dwarf in size both Idaho's Sun Valley Ski lift and New Hampshire's Franconia Notch tramway.

The second project is an award by the Southern Counties Gas Company, of a contract for 214 miles of 30-inch steel pipe, needed in the Blythe-to-Los Angeles section of the new gas pipeline which will bring natural gas from the rich fields of Texas and New Mexico. It will be the first Western application of high-strength, longitudinally seam-welded steel pipe.

In the Phoenix area, whose population has increased by half a million during the

war, things are shaking down to a more stable basis. Reynolds Metal Company is preparing to move into the former Alcoa extrusion plant, which it leased from the Government. War Assets Administration staged its first major surplus sale in Arizona by holding a \$500,000 clearance of all machinery and equipment not taken over by Aviola Radio Corporation when it bought the former Airesearch plant. The city of Phoenix looks more prosperous than ever, with a good deal of new home building under way.

Arizona Employment

Arizona's employment outlook is the best in many months, with 2,330 unfilled job openings now on file with U.S.E.S. Clearing of the strike clouds has set the copper mines buzzing with activity once more, and several hundred men have been added to their payrolls in the Miami-Globe area. Wages, of course, are at an all-time high, with even unskilled underground workers receiving \$1.03 an hour.

Back in the depths of the Black Hills, 46 miles from Tucson, a straggling collection of trailers and tents sizzles through mid-summer heat at the job of sampling what is termed the largest copper deposit located in Arizona since 1910. Already 100,000,000 tons of low-grade ore are said to have been mapped, and mud samples from depths as great as 2,600 feet are being churn-drilled for assay at a cost of \$20,000 per hole.

Whether or not the little settlement will ever become a hustling boom town will depend upon copper prices and on metallurgical possibilities of working this low-grade ore. It's just another bit of the West's enormous treasures in raw materials waiting to be exploited, but chances are the wait won't be too long with continuing copper shortages.

Water Shortage

Another of the West's most vital resources — water and hydro-electric power — is currently a matter of concern. A drought of serious proportions has brought run-off water in some Arizona streams to an all-time low record. Lake Mead, chief source of Boulder Dam hydro power, fell one-third below normal level and water inflow this spring has run only about 36 per cent of normal. Industries of the Southwest, as well as farmers, face a 100,000,000 kilowatt-hour power shortage which in turn might mean inability to pump irrigation water from deep wells in the Phoenix area.

The Bureau of Reclamation is taking emergency measures which are to include moving a 10,000-kw railway-mounted steam plant from the Mare Island Navy yard, arrangements for importing power from southern California sources, and pooling of all power generating facilities of the area by interconnecting transmission systems.

REGIONAL REVIEWS

OLYMPICS TO THE COEUR D'ALENES

SEATTLE—Prospects of metal production in Washington grew brighter last month with the announcement of plans for a \$3,500,000 sheet steel rolling mill to be erected in Seattle by the Seidelhuber Iron & Bronze Works, and the return to active operations of the Trentwood aluminum facilities at Spokane under the management of The Permanente Metals Corporation, a Kaiser enterprise.

Plans for the Seidelhuber mill are already in the active design stage with an ultimate maximum capacity of 300,000 tons annually. To be equipped with five furnaces, hot and cold rolls, and annealing, pickling and galvanizing facilities, the mill will produce black, galvanized, and corrugated steel sheets and tin plate.

With an initial capacity of 50,000 tons, 20 per cent of the plant output will be

utilized by the manufacturing and structural steel divisions of the Seidelhuber organization while the remainder will be available to Northwest manufacturers of steel products and for export. Present plans call for construction of the mill to begin early next year.

Seven remelt furnaces at the Trentwood aluminum mills are now producing commercial and aircraft aluminum alloy ingots and The Permanente Metals Corp. expects to have twenty furnaces in capacity production when full operation is reached. Hot rolling facilities have been placed in operation with production scheduled for gradual increases each month. Until production of the reduction plant at Mead can be built up, the rolling mill will work on aluminum pig from Metal Reserve and scrap.

Even before the Mead reduction plant was placed in operation Permanente indicated that present capacity of 108,000 tons would be increased by the addition of two more pot lines, provided that additional electric power could be secured from the Bonneville Power Administration and equipment purchased from other war-built aluminum plants now being dismantled.

Insufficient Capacity

At present the reduction plant does not have sufficient capacity to occupy completely the rolling mill production facilities, and it is undoubtedly to equalize these two that the projected increase is planned at Mead. Production schedules at the Spokane plants this year call for production of 2,000 tons of aluminum during July with a step-up of 2,000 tons per month until November with a total of 40,000 tons to be produced this year.

Isaacson Iron Works, long time Seattle producers of tractor equipment for logging and construction industries, have expanded to the east by purchase of the Sundstrand Machine Co. at Rockford, Ill., from War Assets Administration. Purchased at a price of \$360,000, the plant will be used for manufacture of tractor equipment.

Olympic Designers and Builders, in Seattle, have begun construction of a new assembly building addition to their machine works, recently reconverted from war time marine work to normal manufacture of logging and sawmill machinery. School busses will be assembled and truck bodies manufactured in Spokane, the abandoned street car barns of the Spokane United Railways having been purchased for this purpose by the Quiltlund Body Co. of Seattle.

Mining operations in the eastern part of the area are definitely on the increase. The Sidney Mining Co. have placed in operation a new concentrator with a capacity of 250 to 300 tons per day and possibilities of increasing that capacity to as much as 500 tons. In early operation the

We're Geared To Your Emergencies!

We like a lot of little orders instead of calls for carload lots. In fact, we could seldom fill a carload order out of stock — because we're set up to take care of your day to day emergency needs. Variety and diversification is our forte — the largest and most complete stock of steel tubing in the West. Give us a whirl.

BAKER
STEEL & TUBE CO.
1400 CALZONA STREET
LOS ANGELES 23

new plant has shown recoveries as high as 95 per cent of the assay value of the ore.

At Metaline Falls, Wash., the Pend Oreille Mines is planning installation of additional milling capacity for 1,000 tons a day as soon as men, materials, and equipment are available. A similar installation is planned across the Canadian border for Reeves MacDonald, controlled by Pend Oreille. Exploration of the South Fork of the Clearwater River in central Idaho is in prospect with the announcement that Mineral Exploration & Research, Inc., Yakima, Wash., will build an operations center near Grangeville, Idaho.

More About PUDs

Power, always a controversial subject in this area, may again figure politically in the fall elections in Washington. As a result of the attempted purchase of Puget Sound and Light properties by the Skagit County Public Utility District, a relatively small organization, with the backing of some fifteen other PUDs, also relatively small, an initiative measure to require that PUD bond issues be approved by the voters rather than the board of directors only has been filed with the Washington secretary of state.

A recent filing of 90,000 signatures has made it almost certain that the measure will reach the electorate this coming November. Perhaps at that time it will be

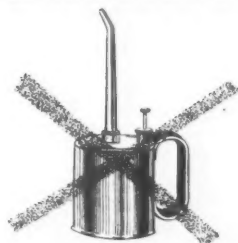
possible to tell how wide approval is behind the present movement to take power out of private operation and place it in the hands of the public.

At the same time public power is going ahead with expansion programs. The Seattle city light department has recently announced that Ross dam on the Skagit River would be completed to final elevation without an intermediate stop as originally planned. Although no power generation is planned at Ross in the immediate future, completion of the dam will provide more firm power at Diablo dam downstream.

Two new ventures have come to light, both in experimental and exploratory stages.

The Governor's (of Washington) Advisory Committee has urged that Washington State College at Pullman complete its development of the "fruitamin" process survey market possibilities on the West Coast for the dehydrated apple confection, and construct a small pilot plant for tentative manufacturing processes. Standard Oil Co. of California are leasing land in the vicinity of Everett, Wash., as a preliminary to the drilling of an exploratory well in a hunt for natural gas or oil in the Seattle area. A similar venture near Bellingham in Whatcom County was recently abandoned when the well went below 7,000 ft. without signs of producing.

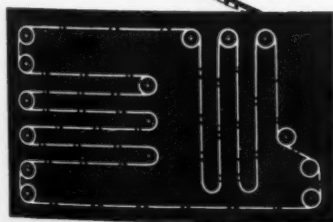
No LUBRICATION



When you install Fabco Flexible Couplings you can forget lubrication entirely. *We planned it that way . . .* because we learned from long experience that couplings which require lubrication are usually not lubricated at all. They are often installed in positions hard to reach with an oil can, machinery must be stopped to do the job . . . it's the kind of a nuisance that mechanics let slide by until trouble develops. Since we knew we couldn't change human nature, we designed Fabco Couplings to operate quietly and indefinitely — without lubrication. You simply buy the right size, install it properly, then proceed to forget it.

F. A. B.
MANUFACTURING CO.
1249 SIXTY-SEVENTH STREET
OAKLAND 8 · CALIFORNIA

Designed TO REDUCE PRODUCTION COSTS



Your present plant can be modernized with a well engineered CONVEYOR SYSTEM to give you Straight-Line, streamlined production, and provide a steady and uniform flow of material through assembly.

A wide variety of shapes and sizes of materials can be moved on conveyor racks, hooks, pans, trays, or slings. The path of travel may be straight or irregular; long or short; up or down; between buildings, or whatever your building construction and assembly processes require.

The amount of stock required on floor, time losses, and accidents are reduced to a new low with this more efficient conveyor method of moving assemblies along the production line. Damage to material in transit is practically eliminated, cutting down sharply on rejections and resulting in a better finished product.

American specialists will design, engineer, and install the right type of conveyor equipment to MODERNIZE YOUR ASSEMBLY LINE. Your inquiries are invited and will receive our immediate attention.

AMERICAN PIPE & STEEL CORPORATION
Engineers, Designers, Fabricators
Alhambra California

REGIONAL REVIEWS

THE COLUMBIA EMPIRE

PORTLAND—Aluminum is the word for Portland and surrounding territory, with so much activity in this branch of the metallic field that it has even seeped into building construction. It was recently announced that one of the three large office buildings planned for early construction in downtown Portland will have an aluminum exterior.

Basically, however, the news is that the

Troutdale reduction plant is scheduled for reopening late in July or early in August under the guidance of the Reynolds Metals Co., while the Aluminum Company of America is set to go ahead with expansion of its Vancouver, Wash., reduction plant, using a local alumina.

War Assets Administration during June authorized Reynolds to proceed with reopening of the Troutdale plant, built by

Defense Plant Corp., and operated through the war years by Alcoa. Reynolds announced that the full capacity of the plant will be utilized and has set to work preparing the plant for operation. It should be in production this month.

The Aluminum Company of America, which has been investigating the possibilities of using alumina mixed with a low-grade iron ore that exists in considerable quantities northwest of Portland, seems to be satisfied with the results of those investigations. Arrangements are now being made to bring limestone down the coast from Alaska for use in the process at the Vancouver reduction plant. This should result in a distinct enlargement of Alcoa's operation on the north side of the Columbia.

On the slightly less optimistic side, there is the report that the Salem experimental plant has so far not been able to develop a commercially successful alumina using the ammonia sulphate process. The plant has been operated by Columbia Metals Corp. for the federal government and will continue to be operated at least until Jan. 1, 1947. Production of alumina will continue, however, only on an experimental basis, although the plant will turn out ammonia sulphate for fertilizer to be exported under a contract with UNRRA.

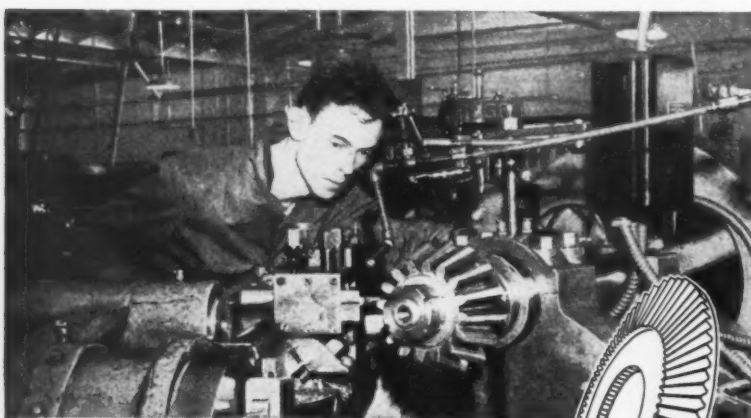
It is impossible to speak of aluminum in this area without mentioning the low-cost electric power which was the original factor in location of the reduction plants. With the reopening of the Troutdale plant and the Trentwood plant at Spokane the Bonneville Power Administration has expressed concern over a possible power shortage.

More Generators

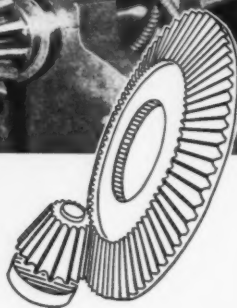
The power output of Grand Coulee dam has been reduced since the end of the war by the removal of two small generators borrowed from Shasta Dam for the emergency. These will be replaced by full size units now on order, and the Bureau of Reclamation is planning at least one "king-size" unit for the first installation in the right power house.

Secretary of the Interior Krug, making an extended tour of the Pacific Northwest during June, said that work would be started this summer on the McNary Dam in the Columbia River at Umatilla, Ore., and that every effort would be made to start construction of Foster Creek Dam downstream from Grand Coulee. Despite Mr. Krug's statements, industrialists expecting any great increase in electric power through either of these two projects within the next seven years will be doomed to disappointment.

It will be two years before any major construction can be undertaken at McNary, and there is not the faintest hope for Foster Creek until the Bureau of Reclamation and the Army's Corps of Engineers re-



Johnson Gear Craftsmen custom-cut gears to your order



Transmitting power and motion is an exacting art with Johnson Gear Craftsmen. Into every gear-cutting job goes all of our engineering knowledge and superior craftsmanship... an experience gained through years of solving problems and precisioning gears for highest efficiency and maximum use of power.

All heat treating under rigid control in our own plant to assure maximum values from various alloys. All gear cutting on machines specially designed for the particular purpose. Each step constantly inspected and tested. For smooth, trouble-free gear service in your plant, send us your blanks, samples or specifications.

GEARS GEAR CUTTING MACHINE WORK

★ GRINDING

Internal
External
Centerless

★ LIGHT MANUFACTURING

★ ENCLOSED UNITS

★ HEAT TREATING



JOHNSON GEAR & MANUFACTURING CO., Ltd.

MAIN OFFICE AND WORKS · BERKELEY · CALIFORNIA

linquish it as a vehicle for an inter-departmental tug of war. In disputing as to who shall build the project (which will be a power producer, pure and simple) the two departments are providing an excellent argument for the proponents of a Columbia Valley Authority.

Portland laid claim to the title of "the nation's lumber capital" last month when the West Coast Lumbermen's Association removed its headquarters from Seattle to the Columbia River city. Just a short way down the river work has been started for the Weyerhaeuser Lumber Co. at Longview, Wash., on a \$7,000,000 expansion program involving the construction of about fifteen buildings. The first structure to be started was an 180x330-ft. pulp storage warehouse and the next will be an 140x160-ft. reinforced concrete power house.

At the state capital a ten-man committee recommended to Gov. Earl Snell the creation of a department of conservation to carry out a comprehensive, long-range, state forestry program.

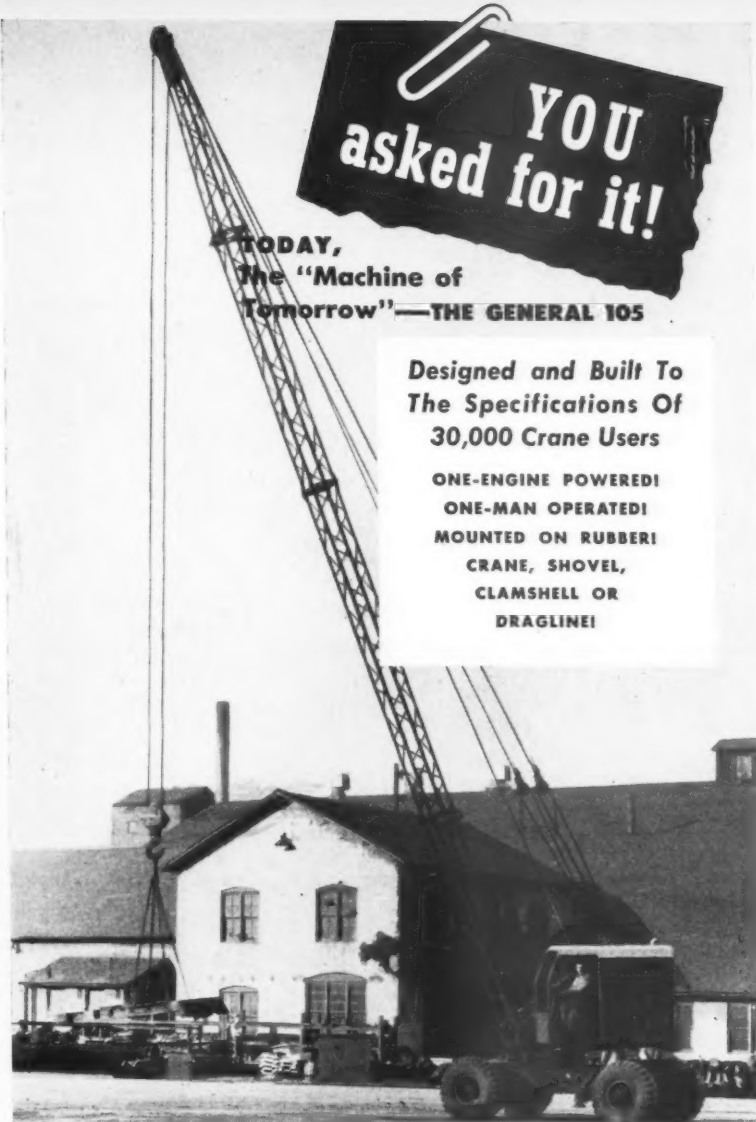
The committee also recommended the creation of a \$25,000,000 state corporation to carry on a rehabilitation program of the 300,000-acre Tillamook burn and a number of other smaller burned areas as well. An extensive program of stricter enforcement of fire protection laws, coordination of various fire protection agencies, and fire fighting training of logging personnel was also recommended.

More Timber Sought

Several plans to increase timber output in the Northwest have appeared. Timbermen generally seemed to be of the opinion that the Federal Government's allocation of funds for the construction of access roads would be of no assistance in raising lumber production this year since construction of the roads will require much of the time left. The road program is expected to make available timber in the Lewis River area north of Yacolt in Skamania County, Washington; the Clackamas area in eastern Clackamas County, Oregon, and the Umpqua River area in Douglas County, Oregon.

The Civilian Production Administration informally outlined a plan of premium payments for peeler logs with the object of increasing plywood production as much as 25 per cent. The plan would pay log suppliers a premium of \$7.50 per thousand feet above a pre-set production goal, individual quotas being allotted each participating company. Formal adoption of the plan was said to be awaiting discussion with labor representatives.

The Clatsop County operation of Crown Zellerbach Corp. was awarded a citation for the outstanding safety record of 1945. Operating for 5½ months without a lost time accident, the camp had the most favorable accident rate of any Pacific Coast logging company.



**YOU
asked for it!**

**TODAY,
The "Machine of
Tomorrow"—THE GENERAL 105**

**Designed and Built To
The Specifications Of
30,000 Crane Users**

**ONE-ENGINE POWERED!
ONE-MAN OPERATED!
MOUNTED ON RUBBER-
CRANE, SHOVEL,
CLAMSHELL OR
DRAGLINE!**

• More work, in less time and at lower cost, means more jobs and more profits! With the General 105, jobs are completed on time and right because these husky units are built to turn in record performances on *all types of jobs*, including most of those you couldn't handle in the past.

The General 105, for example, was designed and built to meet the requirements of 30,000 crane

users . . . men who know crane operation told the men who know crane design and construction what they wanted . . . and in the General 105, they've got what they asked for!

Write today for your copy of the "105 Comparison Folder" . . . it's packed with facts of interest to every crane user. Address The General Excavator Company, Marion, Ohio.

General Machinery Co., Spokane, Wash.; Wood Tractor Co., Portland 14, Ore.; M. M. McDowell & Sons, Seattle 14, Wash.; Power Equipment Co., Denver 5, Colo.; Hyman-Michaels Co., Los Angeles-San Francisco; Western Machinery Co., Phoenix, Arizona, and Salt Lake City, Utah.

ONE-MAN CONTROLLED • ONE-ENGINE OPERATED • RUBBER-TIRED

THE OSGOOD CO. MOBILCRANES **THE GENERAL EXCAVATOR CO. SUPERCranES**

MARION, OHIO

REGIONAL REVIEWS

CONTINENTAL DIVIDE

DENVER—Upsurging industrial activity in all parts of the Rocky Mountain region is indicated by expanded payrolls following settlement of strikes, increased building activity on large and small projects, opening up of multi-million dollar highway development programs in all of the mountain-and-prairie states and rapid growth of oil and mining enterprises.

Following a lull that was due to shortages of materials as well as of men, the

region's industrial activity has bounded ahead with such a spurt that estimates covering the last half of 1946 may have to be overhauled and pegged at new high levels. This does not take into account the consequences of President Truman's veto of the OPA extension bill and the early-July disintegration of price controls.

Results of that sequence of events cannot be evaluated at the time this is written, so far as the West's industrial activity is concerned. However, it is significant

that a report was issued by a prominent statistical house a few days after price control was suspended with recommendations that a number of Colorado stocks should be purchased. This service, Standard & Poor's, stated "prospects for companies operating in the Rocky Mountain region are believed to be excellent, based on reports from our field staff."

Metal Miners Return

Termination of the strikes of copper and lead miners, which had delayed reconversion while some 35,000 workers waited month after month for their union leaders to strike a new bargain with operating companies, was seen not only in the West but in the nation at large as the end of the last great bottleneck to full-scale industrial activity.

The miners obtained stiff wage increases, retroactive to Sept. 1, 1945. Manufacturers whose operations had ground to a halt because of lack of copper, lead and zinc products now are swinging into full-tilt production once more.

Oil Industry Booms

One industry that wasn't tied up by strikes and reconversion difficulties was the oil industry, and in the mountain-and-prairie states this industry has proved to be a veritable Santa Claus. At widely scattered points in Montana, Wyoming, Colorado and New Mexico the oil companies are expanding their exploratory and drilling programs well above the \$6,000,000-a-month pace that was maintained during the spring of 1946. That figure does not include activity in New Mexico, but does cover the rest of the Rocky Mountain region.

"Doing a land office business," is the Westerner's favorite superlative, and it meant just what it says in the Denver office of the U. S. Land Office all during the first half of 1946. In June the demand for oil leases on U. S.-owned public lands, plus other permits for grazing, homesteading and mining privileges, was at the rate of \$1,463,040 a year.

Land Office Profits

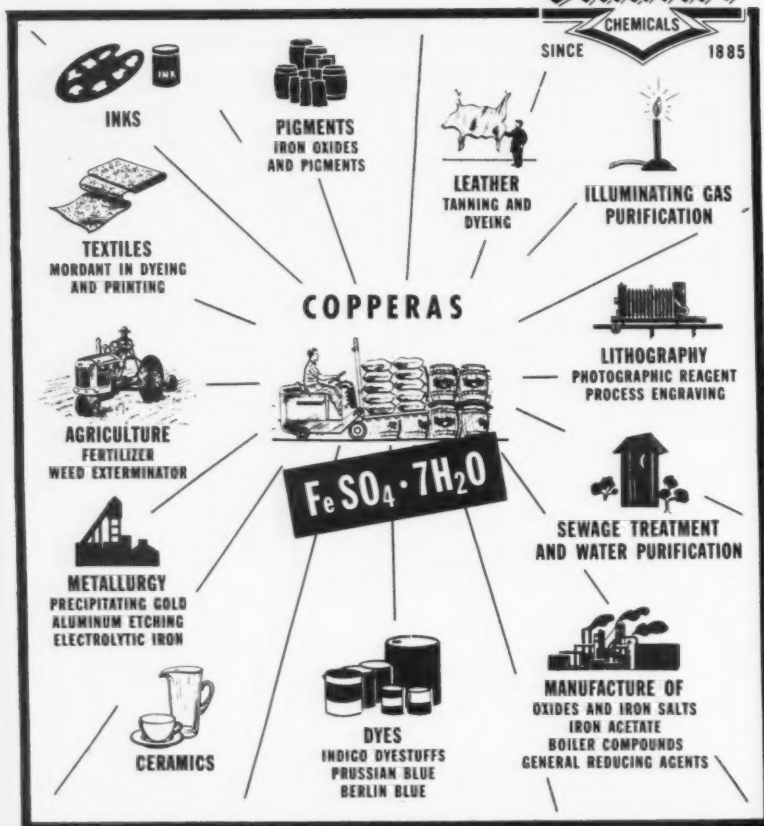
This sum merely represents the nominal fees and royalties received by the government, and in virtually all cases many times the amount of the fees and royalties is received by the operators. Eudochia Bell Smith, former Colorado State Senator, now registrar of the U. S. Land Office in Denver, says that a large percentage of the current revenues received by her office are from Colorado's booming oil discovery, Rangely Field.

Following the lead of the world's largest oil companies, independent oil operators now are moving their equipment and personnel into the Rocky Mountain region to get in on the lucrative petroleum developments being opened up in Colorado, Montana and Wyoming.

COPPERAS

Serving Industry and Agriculture

Stauffer
CHEMICALS
SINCE 1885



(This is the eighth of a series of charts on chemicals and their uses)

Stauffer Chemical Company

SAN FRANCISCO

NORTH PORTLAND

LOS ANGELES

CHEMICALS

FOR INDUSTRY AND AGRICULTURE

Among these are the J. M. Huber Corporation, operator of the world's largest carbon black plant and other off-shoots of the natural gas industry at Borger, Texas. This firm, in partnership with the Frontier Refining Company and the Sharples Corp., owns 126,000 acres of oil leases in the promising Baca County area of southeastern Colorado and is launching an initial drilling program of four wells.

Rangely Field

The Sharples Corporation is also operating at Rangely Field, and the Frontier Refining Company is engaging in a number of oil development operations in Wyoming and Colorado to increase its output of crude to supply its big refinery at Cheyenne. Another important independent operator now bearing down on development work in the Rocky Mountain region after years of successful operation in other oil-producing areas is the Bay Petroleum Corporation, which has a refinery in Denver that now processes petroleum for other producers including the California Company (Standard Oil Company of California), leading producer at Rangely Field.

Amid all the talk about pipeline outlets for Rangely Field, little attention has been paid to the fact that existing pipelines are being used to deliver Rangely crude to refineries at Denver and Cheyenne as well as at Salt Lake City. The 10-inch line of the Utah Oil Refining Company (part of the huge Stanolind pipeline network) is now able to handle 26,000 barrels of oil a day.

This line moves the oil 150 miles northward into Wyoming where it joins the east-west trunkline that can move the oil westward to the Salt Lake City area in Utah or move it eastward in Wyoming to refineries at Caspar, or east and then south via the Rocky Mountain Pipe Line to Cheyenne and Denver.

The Stanolind system, continuing eastward as far as Whiting, Indiana, can put oil from any Colorado or Wyoming oil field into virtually any refinery in the mountain-and-prairie states plus those in the Great Lakes area. However, there still is much talk about more pipelines from Rangely Field, and new refineries probably will be built soon at Denver and possibly at some point on the Rio Grande railroad in western Colorado, probably at Grand Junction.

Truckers Like Valley Highway

Denver, crossroads of the mountain-and-prairie states, likes to be called "high, wide and handsome." Being a mile high is good, and being some 12 miles wide has its advantages, but getting across the city from north to south has taken from 35 minutes to one hour.

Truckers, in particular, have been cheering the Stapleton administration for putting through a grandiose project known as the Valley Highway, which cuts the time for the cross-city journey to only 12 to 15 minutes. The new highway, now virtually

Standard can give you any one or all three..

BECAUSE Standard builds power and gravity conveyors in light-average—or heavy duty types for either stationary or portable use, as well as a wide range of special types, you can install Standard equipment as you need it.

For "spot" handling of packages at receiving or shipping departments a section of wheel or roller conveyor will save time and eliminate excess manual handling. For stacking and piling merchandise in warehouse or storage rooms a Standard Handibelt or Handipiler portable conveyor will speed the work and utilize hard-to-get-at ceiling space. For complete "linking" of all operations from receiving through manufacturing to shipping a system of Standard power or gravity conveyors (in belt, roller, slat, push-bar, or chain types) cuts handling time, manpower, and costs to the minimum.

Whatever you need—whatever your plans in conveying equipment, check with Standard and gain the benefit of a 40 year background in conveying and conveyors.

Write for useful reference book "Conveyors by Standard" Catalog No. W1-86

STANDARD CONVEYOR CO.

General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

PACIFIC FACTORY BRANCH
840 Harrison St. San Francisco 7

Pacific Sales Offices:
1412 Santa Fe Ave. Los Angeles 21
A. F. Comstock

1115 N.W. Gilson Portland, Ore.
Spencer Machy. Co.

1718 Broadway Seattle, Wash.
Fryer-Knowles



ROLLER-BELT-SLAT-PUSHBAR CONVEYORS • PORTABLE CONVEYORS
AND PILERS • SPIRAL CHUTES • PNEUMATIC TUBE SYSTEMS

complete and in use except for a few final spots, really is two two-lane roadways separated by a 44-foot wide median strip. The road runs parallel to the Platte river and connects with major north-south highways.

Efforts of a well-heeled road boosters association, the Colorado Good Roads Association, are directed toward financing a \$100,000,000 highway development program. Contractors, supply houses and motorists clubs have raised a sizeable nest egg and hired a promoter to push the program. This man, Ray H. Brannaman, says, "The problem is right under our noses, and there is no escaping it. We've got to have the roads, or be satisfied to be a flag stop on the route to destiny."

To help finance the program, or rather

the state's end of the proposed Federal-aid program, Brannaman's group urges increasing the state gasoline tax from four to six cents a gallon and also favors a state excise tax on crude oil of five cents a barrel.

The latter proposal isn't being taken very seriously because Colorado has a peculiar quirk in its state constitution, put there by a clever lawyer named O. Otto Moore. Several years ago when pension plans were a dime a dozen, Mr. Moore and a group of associates drafted a constitutional amendment calling for payment of \$45 a month minimum pensions to qualified residents of the state who reached the age of 65.

This measure was adopted by the voters and at a subsequent election the voters con-

firmed their decision. It tags 85 per cent of all revenues from excise taxes for the Old Age Pension Fund, and provides that any money left over in the fund at the end of the year shall be divided among those eligible for the old age pensions.

Each year the pensioners receive a "jack pot" payment, often amounting to several hundred dollars, in addition to their \$45 a month pensions. Mr. Moore has always claimed to oppose excise taxes, on the theory that they fall most heavily on the poorest people, and he brags that his measure has put a stop, in Colorado at least, to the nation-wide trend of adopting more and more "painless" excise taxes of one sort and another.

This time it looks like Otto Moore was right — if Colorado doesn't levy a tax on oil production within the next year or so, the only reason will be that most of the proceeds would go to the Old Age Pension Fund, which admittedly has plenty of money already.

Wanted—A Streamliner

Lack of fast, modern transportation north and south still is the greatest handicap faced by business and industry in the Rocky Mountain region. Most of the blame for this condition is placed on the Burlington railroad, which provides what little north-south transportation there is from Denver and Cheyenne northward through Wyoming and Montana. The Burlington system fans out from Chicago and provides a profitable supplement to the transportation systems of the two "transcontinentals" that own it—the Northern Pacific and the Great Northern.

But those railroads are east-west roads, with no apparent interest in developing north-south traffic in its natural course up and down the flanks of the Rocky Mountain range. All efforts of Wyoming and Montana businessmen to get the Burlington to put in fast streamliner service from Great Falls, Montana, through Wyoming to Denver, Colo., have been met with timorous excuses. The hopelessly slow trains now used have little patronage, it is true, since it is common knowledge that this is one of the slowest and most tedious journeys to be made in any civilized country.

But the territory that would be served by a modern railroad connecting all of the "Front Range" cities is already developed sufficiently to make such operations profitable. The streamliner service from Denver southward to Dallas and the Gulf Coast is a noteworthy success, as is the streamliner service that connects Denver with Chicago, Kansas City and St. Louis. But that northward route from Denver through Wyoming and Montana—it needs streamlining.

Railroad For Rangely?

One of the sidelights to the development of great mineral production in the Uinta Basin is the discovery that this huge area of the United States not only has no



CASTERS

FOR EVERY PURPOSE

Casters for furniture . . . for tubular equipment . . . for industry . . . for trucks . . . for hospitals. Every kind and type of caster is carried in stock at Colson. There are round stems, square stems, threaded stems, flat top casters, rigid fork, and swivel casters — rubber tired or all steel; ball-bearing or bronze bushed. Regardless of your caster needs, there is a type and style to meet your requirements.

Order by telephone from any of the three establishments or write for illustrated catalog.

COLSON

EQUIPMENT & SUPPLY CO.

<p>LOS ANGELES 13 1317 Willow St. TRinity 5744</p>	<p>OAKLAND 7 350 - 10th St. TEmplebar 3556</p>	<p>SAN FRANCISCO 5 235 Mission St. GArlfield 0282</p>
---	---	--

WRITE FOR CATALOG

railroads but probably never will have any railroads. Oil men and other businessmen ask, "Why?"

There is much talk about better highways to serve Rangely oil field, which is more than 100 miles from the end of the Denver & Salt Lake railroad at Craig, Colo. Hundreds of the Rangely workers and their families live 65 miles from the field at Vernal, Utah, a thriving industrial city surrounded by America's largest gilsonite and asphaltum deposits as well as much oil activity.

But Vernal has no railroad. The nation's future oil supply, locked in the oil shale deposits of the Uinta Basin, likewise is without rail transport except at the extreme southern edge of the deposits near Rifle, Colo. That there has been no railroad built into this recently-developed mineral storehouse is not surprising, but now that its resources are known and huge development programs are being launched at many points the question naturally comes up, why shouldn't there be a railroad into the Uinta Basin?

Must this area forever be dependent upon trucks and pipelines? What does the Rio Grande have to say? What about the Union Pacific? These are the questions being asked today when business men think about the Uinta Basin.

Wyoming Gets 10-Year Airport Expansion Plan

A 10-year airport expansion program for Wyoming has recently been completed by Kaiser Engineers, Inc., of Oakland, California.

Purpose of the program, which includes complete studies and recommendations of each airport site in the state, is to provide a state airport system that can be fully integrated with the national airways expansion program which will be carried out over the next 10 years.

Lockheed Bids For Small Town Freight Business

Operable in and out of undeveloped airfields, Lockheed's Saturn, a twin-engine, regional transport, is expected to provide maximum use in both cargo and passenger operations in small towns not presently served by air transport, says a company statement.

The ship assertedly is the first commercial plane to use three major aviation advances of the war years: extra power gained from jet thrust of harnessed engine exhaust gases, a laminar flow fighter-type wing and a new light weight aluminum alloy developed for fastest pursuit fighters.

It carries 14 passengers or 3,000 pounds of cargo or intermediate combinations. Top speed is over 250 mph.

Design of fuselage is such that a truck can back up to the cargo door for loading or unloading without any special equipment.



ABOVE: Dryer and partial view of plant, Ransome Company, Paving Contractors, Oakland, California

**CLOGGING
PROBLEM**
Solved by
Gas-fired Installation

THE PROBLEM...

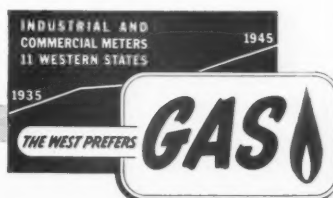
Wet sand and gravel clogged in feed end of this rotary dryer because desired temperature could not be maintained.

THE SOLUTION...

An auxiliary gas burner was installed in a special casing at lower side of dryer, firing *inside* in order to carry heat beyond curtain of mix and maintain higher temperature at feed end. Continuous performance now assured.

Gas fuel is adapted to countless specialized heat processes in many industries, large and small. Apply the unique advantages of gas to the solution of problems that may be "clogging" your production. Your gas company's Industrial Engineers are available for friendly, helpful consultation.

THE PACIFIC COAST GAS ASSOCIATION



REGIONAL REVIEWS

THE WASATCH FRONT

SALT LAKE CITY—With final award of the Geneva Steel plant to United States Steel Corp., Utah businessmen, political office holders and the general public drew a deep sigh of relief and began congratulating themselves and each other on a remarkable achievement in the way of cooperative effort.

For once, virtually the entire state had been united on an economic-industrial

issue and had kept heaving and hoing toward a single objective.

Chambers of commerce, labor union leaders, congressmen and senators, the state administration, county and city officials, and the man in the street lined up behind the corporation's offer and "stayed put" until the bid was approved.

The only defection to break the almost solid front in this state was that of thirty-

odd small metal fabricators favoring Colorado Fuel & Iron Corp.'s offer on the grounds that operation of the plant by that company would assure them of a nearby supply of types of steel (mostly sheets) which they use in their business.

U. S. Steel supporters are confident they will get their sheets under the corporation's operation, although no specific production plans have been announced aside from structural shapes, plate and hot rolled coils for the Pittsburg, Calif. plant.

Utahns were pleased also by the support they received from the Pacific Coast and other intermountain states. The opposition from Colorado was expected and, on this side of the divide at least, was generally interpreted as an effort to protect CF&I's setup at Pueblo rather than a manifestation of concern over the future of Geneva.

On the whole, this state is well satisfied with the sale and are confidently looking forward to a solid and substantial industrial growth.

Silent on Future

U. S. Steel officials, it is true, have remained silent on future plans since the attorney general's opinion approving their bid. But work is going forward to put the existing facilities back into operation and to add additional facilities. Re-hiring was started within a few days after the award was announced.

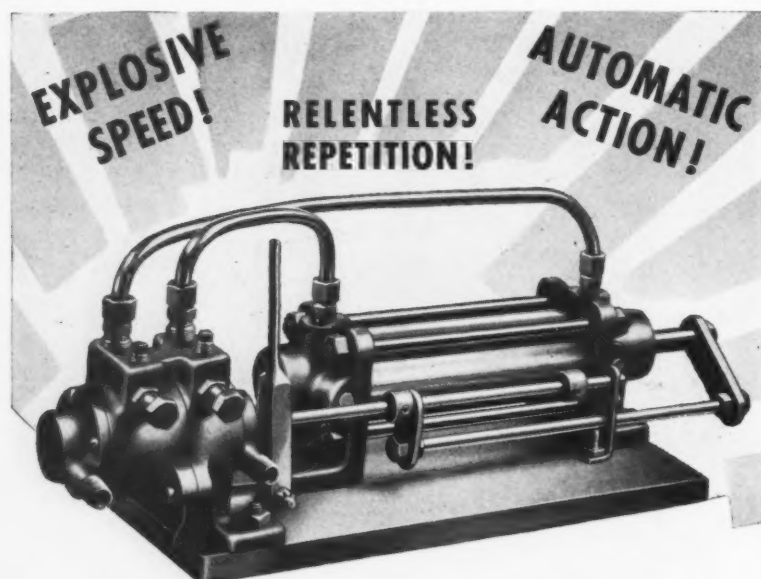
A second battery of coke ovens, two of the three blast furnaces and some of the open hearths will be in operation before this reaches print. Substantial plate orders (some for export) are on hand and it is expected that the plate mill will be able to operate during the conversion period.

No official comment has been forthcoming from company sources on the future of Columbia's pig iron plant at Ironton. But the outlook is that it will continue to operate indefinitely—and possibly be absorbed into the Geneva setup. It has two-year contracts outstanding for by-product gas and iron products, and in any event could not be closed until Geneva is in a position to take over these contractual commitments.

Union Picture

The union picture at the plant is not likely to settle down for some time. Since it started operation the AFL has been the bargaining agent. But last winter the CIO-United Steelworkers of America, slightly misjudging their strength, demanded a new election. And NLRB granted the petition despite the fact that the plant was operating only on a standby basis and had less than 600 union employees.

The election, which went to a run-off, produced a score of 266 for the AFL to 264 for CIO with four ballots challenged. Ruling of the NLRB regional office in San Francisco on the four challenged ballots



NOPAK Reciprotrol Valve

Provides All Three — in Full Measure!

This radically new, 4-way, automatic reciprocating valve features Built-in Controls which provide the following advantages in operating any size or make of air or hydraulic cylinder, at 50 to 300 lb. line pressure:—

- Built-In Speed Control regulates stroke-speed in both directions, independently; allows choice of cycle speeds from 0 to 500 per minute . . . depending upon cylinder diameter and length.
- Accurate Control of Stroke Length from fractional to full.
- Precise Location of Fractional Stroke anywhere within full stroke length.
- Fully-Automatic, Semi-Automatic or Manual operation.

Write, Today, for More Information on the Amazing Reciprotrol.

GALLAND-HENNING MFG. CO., 2749 S. 31st ST., MILWAUKEE 7, WIS.

NOPAK
VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

NOW IN $\frac{3}{4}$ "
PIPE SIZE!

The $\frac{3}{4}$ " pipe size in which Reciprotrol is built makes it suitable for most oscillating applications.

produced an even less decisive result. The count was changed to 266 for CIO and 267 for AFL. This is subject to review by the board in Washington, D.C.

The CIO is already laying plans for a new bid as soon as the force gets up to a normal level. And if they lose then, they can be expected to start another campaign immediately. It is a safe prediction that the CIO-USA will not let the AFL retain its toehold in basic steel if they can possibly prevent it.

New Nephi Plant

The Thermoid Company of Trenton, N.J., has acquired a 28-acre site near Nephi, Utah, for a rubber goods manufacturing plant. The plant will involve an investment of about \$500,000 and employ between 300 and 400 workers on a year-around basis.

Two Utah communities made a fight for the new industry and Nephi almost lost out to Brigham City in the northern part of the state because of electrical power supply. Nephi is served by a small independent company whose industrial rates are substantially higher than Utah Power & Light Co. rates.

The problem was finally solved for Nephi by an arrangement whereby the company serving the Nephi territory will lease facilities to the Utah Power & Light Company to supply the new plant with power.

Location of the industry at Nephi is in line with a program which Gov. Herbert B. Maw has been trying to promote since he took office—distribution of small manufacturing industries in rural areas to strengthen the agricultural economy. He unsuccessfully urged the last legislature to provide funds for acquisition of sites and construction of plants to attract such industries.

Utah's recently ended five-month mine and smelter strike was the most expensive labor dispute in the state's history. The three companies involved estimated lost metal production at \$22,800,000. The wage loss per worker was around \$1,000 and this added up to a total of \$5,000,000 for the 5,000 men on strike (union leaders hotly retorted that their men lost no such amount because they got other jobs).

About \$400,000 was paid out in unemployment compensation to workers idled by the strike but not involved in it, another \$25,000 was spent by the state welfare department and union welfare expenditures were around \$100,000. Because of the working Utah's net proceeds tax law, the tax loss cannot be accurately determined until the year's production is known. But the state tax commission estimated this item at between \$5,000 and \$15,000 daily for the five months. Just what the workmen got that they couldn't have gotten without a strike is a matter of sharply divergent opinion.

ANY LOAD

5 TONS
OR LESS



100 TONS



ANY DIRECTION

LIFTING



LOWERING



PUSHING



PULLING



ANY METHOD

MANUALLY
OPERATED
JACKS



AIR MOTOR
OPERATED
JACKS



HYDRAULIC
JACKS

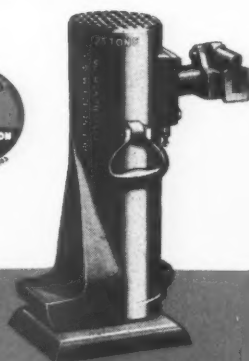


There's a wide range of

Duff-Norton Jacks

to meet YOUR requirements

No matter what the job may be, there is a Duff-Norton Jack to supply the "mechanical muscles." From the wide Duff-Norton line, you'll find Jacks of all types, sizes and capacities—each one easy to operate, safe and dependable. Check your industrial distributor today. Descriptive bulletin on request.



**THE DUFF-NORTON MANUFACTURING
COMPANY**
PITTSBURGH, PA.

Pacific Coast Office & Warehouse
1814 HOWARD ST., SAN FRANCISCO, CALIF.

There is a distributor
near you

LABOR

AND THE INDUSTRIAL WEST

HOT cargo and secondary boycott techniques may become available to labor next month instead of waiting either for the end of the National Emergency, proclaimed in September, 1939, or for the end of the war, as declared by the President.

Reason is that the California State Supreme Court at its September session is to hear a case involving these techniques so widely used by labor up to the time they were legally forbidden.

Case confronting the court is an appeal from a decision of Superior Court Judge Henry M. Willis of Los Angeles in which he ruled in favor of an action brought for damages and an injunction against a group of unions.

The action was based upon the provisions of the "Hot Cargo and Secondary Boycott Act" which was approved by the people in a referendum at the general election of November, 1942.

The complaint, filed by an H. C. Ramser, doing business as the Upholstery Supply Company, stated that agents of Local Union No. 389 of the Van Storage and Furniture Drivers had placed a picket line about his establishment after his refusal to sign a closed-shop contract. He further stated that there was no labor dispute with his 75 employees, and that the union did not represent a majority of them.

Ramser's complaint also contended that several firms with which his organization did business had been threatened with secondary boycotts if they continued to do business with him, and that because of this threat his organization had been caused great loss.

Demurrers filed by labor unions named in the suit combined to question the constitutionality of the act on which the suit was based.

While the act itself has its life limited to the duration of the National Emergency

as defined by presidential proclamation in September, 1939, and "during the period of war between the United States and any foreign power legally declared to exist," Judge Willis held "there does not appear in this legislation any violation or transgression of any provision of either our State or Federal Constitution."

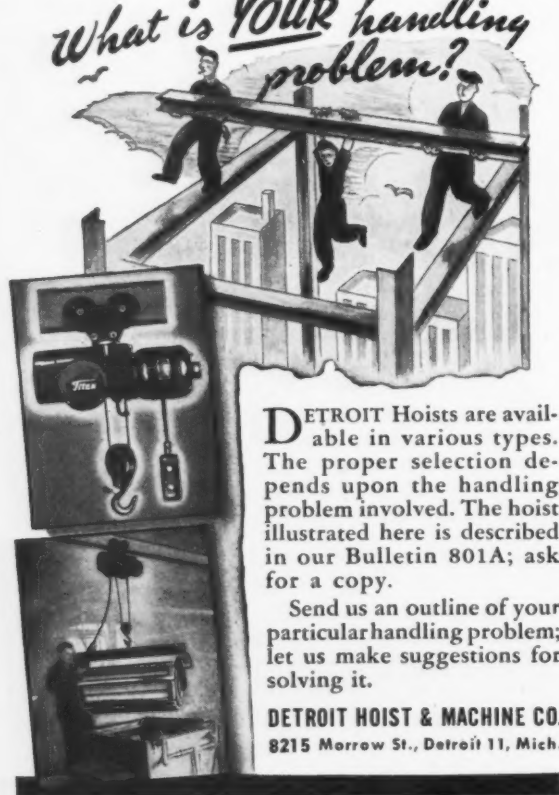
Exceptions to the decision of Judge Willis that are to be brought before the state supreme court will hold that the act is unconstitutional because of its violation of the rights of peaceful picketing and peaceful boycott.

NLRB Clarifies Its Cross Check Policy

NLRB's hitherto doubtful policy with regard to the certification of a union by cross check (checking the membership cards held by the union against the employer's payroll record) has been cleared up by a recent decision in the case of the Joe Hearin Lumber Company of Ashland, Oregon.

Under the old board ruling on cross checks, regional directors were required simply to determine whether or not the union had as members a majority of the employees of the appropriate unit and to so certify to the board. Now, if it appears on the basis of a cross check that the union represents a majority, a notice to that effect must be posted on the employer's premises for five days, during which time interested

What is YOUR handling problem?



DETROIT Hoists are available in various types. The proper selection depends upon the handling problem involved. The hoist illustrated here is described in our Bulletin 801A; ask for a copy.

Send us an outline of your particular handling problem; let us make suggestions for solving it.

DETROIT HOIST & MACHINE CO.
8215 Morrow St., Detroit 11, Mich.

MAGIC is a BOILER-METAL TREATMENT

Easily Meets Changing Water Conditions

It is simple and easy to use Magic Boiler Preservative to stop scale, pitting and corrosion—ALL YEAR 'ROUND—because Magic treats the boiler metal, not the water.

Magic maintains a film of protection on the metal.

It will not distill over and can be safely used in processing industries.

Magic has saved boilers and their maintenance costs the world over for 42 years.

Magic is backed by a service organization without expense to you.

*Ask for a free and accurate survey of
your boilers. Phone or write Today.*

MAGIC BOILER PRESERVATIVE
GARRATT - CALLAHAN CO.
of California

Phone DOuglas 3020
150 Spear St., San Francisco 5, Calif.

Warehouse Stocks and Service Engineers in Principal Cities



parties may challenge the results of the cross check.

With this change NLRB feels that the employees' choice as to whether they wish to be union or non-union may be considered as effective and conclusive as that made through the regularly conducted consent election.

NWSB to Issue Rulings Without Final Action

In anticipation of wage-price legislation by Congress that would put back some of the controls that expired June 30, the NWSB's tenth regional office announced that it would continue to make and issue rulings to parties in "all cases acted upon prior to June 30."

But at the same time it was announced that final action would be withheld on all such cases.

On hand in the offices of the board at the time of its announcement were 138 applications from employers requesting approval of wage increases for pricing purposes, wage decreases, or approval of rates for new establishments.

In the enforcement division of the district were 472 cases, most of them in the building and construction industry in which full wartime wage controls have been in effect continuously since V-J Day.

Employee Deaths Demand Immediate Notification

Death of an employee resulting from an injury received on a job in California must

be reported immediately by telephone or telegraph to the state's Division of Labor Statistics and Research of the Department of Industrial Relations, according to state law.

Violation of this law is punishable by a fine of \$100, says Paul Scharrenberg, California Director of Industrial Relations.

Purpose of the law is to speed investigation of industrial accidents and notification of dependents of the deceased worker in order that their interests may be fully protected.

No Accumulated Seniority

Because he had not established seniority before being inducted into the army and was still in his probationary period as a trainee, the U. S. District Court in Utah recently held that a bus driver for the Interstate Transit Lines in Salt Lake City was not entitled to accumulate seniority during his military service. The probationary period of 90 days, of which he had served 85, and accumulated seniority were both provided for in the union contract, but he had not joined the Amalgamated Assn. of Street Electric Railway & Motor Coach Employees, which had a closed-shop contract with the company.

Worth 25c an Hour

Alexander Film Co., Colorado Springs, have just spent \$50,000 in a profit-sharing bonus to employees. Ed Foster, secretary-treasurer, estimates that benefits furnished

in the form of paid vacations, bonuses, medical service, recreational activities, life insurance, old age annuities, etc., amount to approximately 25c an hour over and above base pay received of employees having five years' service or more.

Washington Law Changed

The recent order of the Washington State Department of Labor of a minimum wage of 65c for women was temporarily nullified when the Superior Court of Thurston County enjoined the Labor Department from enforcing its order. Washington industries had challenged the order, saying: (1) the Labor Department acted without due process of law, (2) without sufficient evidence, and (3) beyond its statutory powers.

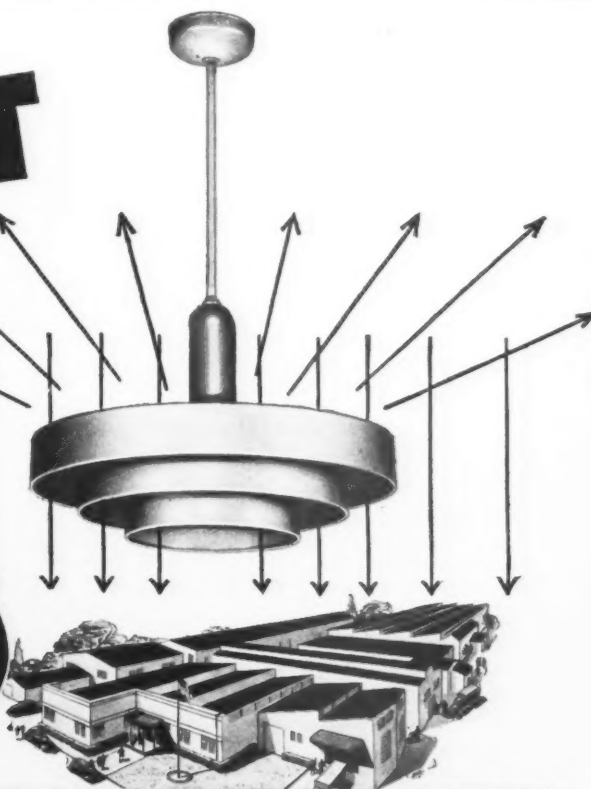
CIO Office Workers Union Outlines Salary Standards

CIO United Office and Professional Workers union delegates in the San Francisco Bay Area have recently completed a study of salary standards to be gained.

Monthly salary standards are set as follows: for basic office workers, no skills or training, \$185; for those with training in basic skills, \$200; for chief clerks, bookkeepers, junior accountants, chemists and draftsmen with A.B. or B.S. degrees or equivalent experience, \$300; for those with Ph.D.'s or two or three years' experience, \$500.

The **ROCKET**

An improved principle in indirect lighting, providing a minimum of interference to the normal wide light distribution from a silvered bowl lamp, and minimum interception of reflected light. The three concentric, satin-aluminum finished flanged steel rings are set in rigid assembly that can't support dirt, paper wads or insects. Ideal for schools, offices, commercial installations. Write for bulletin and prices.



OFFICES IN PRINCIPAL WESTERN CITIES • BRANCH AND WAREHOUSE IN SAN FRANCISCO

Workers Told Of The Six Critical Weeks

EVER since the first of the year I have been wanting to sit down and talk with each of you personally.

With the turmoil created by the change from war-time to peace-time products, there are so many problems and questions. The rapidly rising prices and cost of living; the dread of inflation which would wipe out all savings; the larger industries granting increases in wages, and fighting the OPA for higher prices to meet the new wage scale; and the uncertainty of securing materials due to strikes.

It is well for the small manufacturer and his employees to pause and look things squarely in the face.

First. Reconversion is costly. I want to take this opportunity to point out to you loyal employees who have stuck with us through this trying period, some of the conditions. We have made progress mainly through a lot of hard work and the spending of a lot of money.

Last year of all the income this organization had available for wages, taxes and profits, over 90 cents of every dollar was paid out to employees.

You might ask what became of the other

By means of the accompanying plain, unvarnished statement of the situation, one of the smaller southern California industrial concerns faced with a tough reconversion problem from war production gave its employees the real facts about the situation, so that they would not get any fancy ideas about wage demands or feel that the management were holding out on them.

It was headed "A Personal Letter to Our Employees" and was mimeographed but signed personally by the senior partner of the firm. It is one of the simplest, most direct statements to employees that *Western Industry* has encountered.

10 cents. After paying taxes, it went into plant improvements for the welfare of the employees, and for building and equipment so that a larger number of citizens of this community might have this industry here.

Second. This organization looked forward for two years before the close of the war to provide for the manufacture of peace-time goods, and did so to the extent that we were able to keep 40 per cent of our employees after the cancellation of war contracts.

The first 4½ months were the toughest. Some of the goods we were working on proved unsatisfactory. The cost of production of some other jobs made them money losers.

With the January closing of the books we found that for every \$1.50 paid for wages, only \$1.00 was available. The other 50 cents had to come out of the pockets of the partners, and not from previous profits.

You will realize that no organization can long continue to operate under such conditions. We have tried to economize, first by laying off non-productive employees. We began at the top and one by one they have been laid off and their duties taken over by Mr. —, Mr. — and myself (the three partners).

Third. What of the future? We came to the end of January with some improvement, but still showing a loss. February and March saw greater improvement, but still in the red. We hope that with new tooling we shall soon be on the market with a new model — (name of product) and increase the volume of sales.

For some time we have been working on a plan of wage incentive. Details of the plan had to be side-tracked until the new tooling and methods of production would make it possible to rate the workman's output more fairly.

Pay raises in some industries have been made and the OPA has granted increases



**SPRINGS
STAMPINGS
WIRE FORMS**

PARTS LIKE THESE, made to your specifications. Complete tooling facilities, modern heat-treating department. Spot welding and tapped assembly operations. Send in your prints or specifications.

Hubbard also makes standard and special cutters and washers. Send for special data sheets.

M. D. HUBBARD SPRING CO.
46 WESTERN AVENUE • PONTIAC 12, MICHIGAN



ANNOUNCING ..

The Western Light Metals, Inc. is pleased to announce a faster, better service for manufacturers of the West in production of the highest quality, heat-treated aluminum and magnesium castings for all purposes.

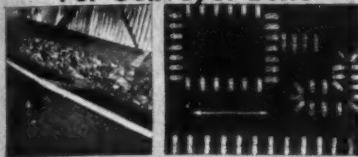
Years of experience combined with the latest equipment and modern laboratory facilities assure consistent and dependable high quality. Let us quote on your requirements.

★
Western
LIGHT METALS, INC.
Spokane, Washington

Present Day Practice in Belt Fastening

Every man who has anything to do with the purchase, application or maintenance of conveyor, transmission or V-belts will find the bulletins listed below of considerable value in connection with belt fastening work. A knowledge of present day practice in belt fastening helps reduce the loss in machine hours due to belt failures caused by the use of the wrong type of fastener or improper application. We shall be glad to send any or all of them to you or to any of the men in your organization.

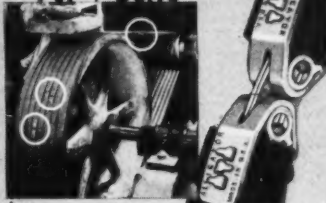
For Conveyor Belts



FLEXCO HD Belt Fasteners are used to make a "water-tight" butt joint in conveyor belts ranging from $\frac{1}{4}$ " to $1\frac{1}{2}$ " thick and of any width. The view on the right shows the various types of rips and patches that can be made with these fasteners and Flexco HD Rip Plates.

Bulletin F-100 gives complete details on how to fasten and repair conveyor belts.

For V-Belts



ALLIGATOR V-Belt Fasteners are now being widely used to fasten B, C and D, open-end V-belted of cross woven fabric core construction now being made by most belting manufacturers. The view at the left shows a typical application of these fasteners to a drive where endless V-belts would require dismantling the machinery to put the belts on the sheaves.

Bulletin V-205 gives complete instructions on how to use V-belt fasteners.

FLEX V Fasteners for A and B belts are also available for lighter duty V-belt drives. Ask for **Bulletin V-14**.

For Transmission Belts



"JUST A HAMMER TO APPLY IT"

ALLIGATOR Steel Belt Lacing is in world-wide use to make smooth, flexible joints in leather, rubber, balata, stitched canvas or solid woven belts up to $\frac{3}{8}$ " thick and as wide as they come.

Bulletin A-60 tells how to fasten and repair transmission belts.

Sold by Supply Houses Everywhere

FLEXIBLE STEEL LACING COMPANY
4642 Lexington Street, Chicago 44, Ill.

in prices to cover their cost, but our products are governed by competitive prices and wage increases will have to come from increased production.

Thousands of small industries have folded up or gone to the wall since the close of the war. We hope to be written down not as one of the failures, but one that will be able to consider its employees' welfare.

What do you say? The next six weeks will tell.

Trailers Employ Torque Bar Suspension Principle

Trailers using individual torque bar suspension instead of springs and shock absorbers are now being produced at better than a rate of 10 a day by the Kit Manufacturing Company of Norwalk, California.

Such an application of the torque bar principle, used successfully in Sherman tanks and airplane landing gear, is believed to be the first for pleasure trailers.

"Mechanical Brain" Can Whip Any Math Problem

Few of the fortunate millions who have never had to study calculus realize that there are problems in mathematics which are so complex that years of work are required to solve them.

A still smaller number of people know that problems of such complexity are found in industry, such as in the study of certain power problems, more often even than they are in astronomy.

But such problems that in the future may rise to bother the heads of western industrialists will no longer have to go for years without a solution.

The reason is that a "mechanical brain", otherwise known as the G-E Differential Analyzer, the sixth in the country, has recently been purchased by the University of Southern California for installation on the campus at Los Angeles.

Bought with funds appropriated by the state legislature for the purpose, the "brain" has 14 polaroid photo-electric systems of unique design which permit the rapid solution of differential equations requiring as many as 14 simultaneous integrations.



• G. E. Calculator



"Good Enough"

was never good enough for Stuart customers in pre-war days.

We gave you the very best that we knew how to give; and you made us the largest California-owned manufacturer of Compressed Gases.

Now we can serve you even better than ever before: the same kind of competent people, but more of them; enlarged, improved plants; the genuine desire to make your work easier and more profitable.

You will find us also a good place to buy equipment and supplies for using industrial gases most efficiently.

Stuart Oxygen Co.

SAN FRANCISCO • OAKLAND • LOS ANGELES

This carbide
is making acetylene
in ten countries.
You can depend on it.

PACIFIC CARBIDE

Manufactured by
Pacific Carbide & Alloys Co.,
PORTLAND, OREGON

Distributed and guaranteed by
STUART OXYGEN CO.

THE WESTERN OUTLOOK... NEWS... STATISTICS...

THE PICTURE

Latest developments in the statistical picture of the West, compared to the month last reported, include the following:

Employment (March), rise continues
Plywood (May), heavy rise
Copper (May), substantial decline
Oil (May), sharp rise
Iron and Steel (May), 2.7 % drop
Coal (April), bottom drops out
Metal Products (March), sharp rise
Electric Energy (May), output up
Unemployment Claims (June), light decline
Warehousing Space (May), off a little

Employment

California workers in production of nondurable goods during May came to the highest figure for that month on record, according to the California Department of Industrial Relations, Division of Labor Statistics and Research.

Though there were continued losses in the aircraft and furniture industries, these were in part offset by advances in production of lumber, iron and steel, and machinery.

In printing and publishing with 17,800 workers, and in the paper products industries with 8,300, May saw new all-time employment highs.

Declines of numbers of nondurable goods workers in the Los Angeles area apparently were attributable to losses in apparel and rubber products factories.

Figures for private shipyard employment remained about the same as those of the previous month with gains in Northern California offsetting losses in Los Angeles area shipyards.

EMPLOYMENT—DURABLE GOODS INDUSTRIES (Figures from Calif. Div. of Labor Statistics)

	San Francisco Bay Area	Los Angeles Indust'l Area	Total State
February 1946	33,700	127,800	206,400
March	34,400	132,200	211,800
April	52,300	129,600	231,400
May	57,200	126,400	235,500

Unemployment—Claims

Weekly average total unemployment insurance compensation claims, originating in each of the following states, and including those filed in those states by veterans, are, according to reports of the United States Employment Service, Department of Labor:

	Arizona	California
April	32,865	372,253
May	11,526	291,323
June	10,612	279,224

	Nevada	Oregon	Washington
April	2,571	53,864	69,500
May	2,177	36,389	61,049
June	1,935	28,210	49,508

Employment—Eleven Western States

Estimated Number of Employees in Non-Agricultural Establishments—In Thousands—Source: U. S. Bureau of Labor Statistics

ALL INDUSTRY DIVISIONS

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mountain	Washington	Oregon	California	Total Pacific
October, 1945	108	94.6	65.7	260	82.4	97.8	136	42.9	888	526	297	2,231	3,054
November	109	95.4	66.4	261	83.1	99.2	136	42.3	892	519	287	2,174	2,980
December	112	96.5	72.4	266	84.3	100.2	136	42.4	910	525	292	2,210	3,027
January 1946	109	95.5	68.9	255	82.8	99.5	130	40.6	881	512	290	2,181	2,983
February	108	95.8	62.3	252	81.1	101.0	127	42.4	870	512	291	2,206	3,069
March	110	98.1	61.3	260	81.2	102.0	130	42.4	885	514	295	2,249	3,058

MANUFACTURING

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mountain	Washington	Oregon	California	Total Pacific
October, 1945	10.7	15.1	4.7	43.9	5.3	7.5	19.9	1.5	109	147	86.0	539	772
November	10.5	14.8	5.1	44.5	5.7	8.1	18.6	1.3	109	141	77.7	574	793
December	10.5	13.2	4.6	44.0	6.1	7.6	17.2	1.3	105	137	76.8	587	781
January 1946	9.6	17.1	5.3	47.6	8.1	6.8	15.2	1.3	111	136	76.0	567	779
February	12.9	16.8	5.4	42.3	8.2	10.9	17.9	3.4	118	162	110.0	550	845
March	13.6	16.9	5.4	47.8	8.4	10.9	18.1	3.3	124	160	110.0	558	828

Warehousing—Percentage of Space Occupied

Figures are based on reports from 634 warehousing firms and are made available by the Bureau of the Census, Dept. of Commerce.

	Mountain and Pacific Division	Idaho	Wyoming	Montana, Utah and Wyoming	Arizona, Nevada and New Mexico	Colorado except Denver	Denver	Washington except Seattle	Seattle	Oregon except Portland	Oregon	California except L.A. and S.F.	Los Angeles	San Francisco
January 1946	89.9	95.9	76.1	95.9	59.5	88.3	90.7	96.2	97.3	97.3	80.8	84.9	94.9	92.6
February	90.3	95.5	76.5	91.4	77.3	87.8	91.9	97.1	97.3	97.3	80.9	83.7	91.9	91.8
March	91.3	88.2	81.3	94.4	70.7	89.0	94.0	96.9	97.3	97.3	80.5	95.6	92.8	92.1
April	90.1	89.7	80.8	94.7	55.7	89.8	87.8	93.7	93.7	93.7	76.9	95.2	92.1	92.1
May	88.9	89.6	82.1	97.0	58.1	89.6	83.3	93.9	93.9	93.9	90.8	96.0	89.0	89.0

Metal Products—Shipments

Value in thousands of dollars, according to figures furnished by the Bureau of the Census.

	Los Angeles County	San Diego County	CALIFORNIA S.F.-Oakland (Alameda, Contra Costa, Marin, S.F., San Joaquin, San Mateo, Santa Clara counties)	All other counties	Total California	COLORADO	OREGON	WASHINGTON Seattle (King, Kitsap, Pierce, Snohomish counties)	All other counties	Total Washington	GRAND TOTAL
January 1946	43,621	2,029	16,627	2,214	64,491	6,062	7,247	15,402	7,829	23,231	101,631
February	53,590	1,656	13,788	2,121	71,155	6,633	6,238	15,402	7,829	23,231	103,459
March	59,447	1,924	16,076	2,299	79,746	2,658	7,554	15,402	7,829	23,231	123,449

Wholesalers' Sales

According to figures furnished by the Bureau of the Census.
(in thousands of dollars)

	Automotive Supplies	Lumber and Bldg. Materials	Dry Goods	Electrical Goods	Furniture & House Furnishings	Groceries & Food, except Farm Products	General Hardware
JANUARY 1946							
Mountain	500	....	....	955	....	3,846	839
Pacific	2,554	....	1,432	4,211	1,322	....	33,95
FEBRUARY							
Mountain	570	....	....	941	....	2,474	761
Pacific	1,391	....	763	4,018	1,150	5,913	1,723
MARCH							
Mountain	703	....	....	1,002	316	3,804	1,121
Pacific	1,712	....	1,548	4,413	1,275	9,842	1,928
APRIL							
Mountain	829	745	....	1,092	317	3,832	926
Pacific	2,766	1,109	1,672	3,628	1,537	13,869	5,287

Electric Energy—Produced in the West

Production of Electric Energy for Public Use—In thousands of Kilowatt Hours—Source: Federal Power Commission

	Montana	Idaho	Wyoming	Colorado	New Mexico	Arizona	Utah	Nevada	Total Mtn.	Washington	Oregon	California	Total Pacific
January 1946	214,953	103,386	18,062	99,255	42,252	248,064	29,249	247,675	888,099	745,231	304,091	1,032,828	2,082,150
February	189,753	91,733	19,945	86,169	42,985	250,759	29,953	239,069	850,366	668,234	299,660	1,108,091	2,075,985
March	190,177	100,495	21,478	91,372	43,422	261,440	39,010	229,264	976,658	732,218	304,367	1,333,305	2,356,471
April	151,245	95,160	21,334	92,179	40,740	291,203	46,057	155,875	893,839	685,080	297,314	1,374,077	2,369,890
May	176,298	113,529	29,058	90,733	43,050	289,657	44,675	183,231	970,231	685,643	306,834	1,467,309	2,459,786

FROM THE RESEARCH DIVISION OF WESTERN INDUSTRY

Freight—Western Traffic

Recovering swiftly from the low point in May freight loadings in the West in June climbed back to a point exceeding those of February, January and last November.

Total traffic figures for all major railroad carriers in the eleven Western states from July 1945 through April 1946 are:

	Loadings	Eastern connections	Total
July, 1945	960,556	388,440	1,348,996
August	695,277	450,497	1,145,774
September	595,143	310,868	906,011
October	617,023	313,964	930,987
November	535,620	278,746	814,366
December	586,302	302,807	889,009
Jan., 1946	469,139	240,906	710,045
February	467,054	243,725	710,778
March	594,106	311,419	905,525
April	438,318	236,816	675,134
May	401,529	216,217	617,746
June	577,666	307,451	885,117

Oil—On the Coast

Both total supplies and deliveries of petroleum products in the Pacific Coast territory increased on a daily average in May over the April figure, according to the Petroleum Economics Division of the U. S. Bureau of Mines.

Total amount delivered daily by the oil companies in the area, including all deliveries to the federal government, offshore shipments and transportation and other losses, was:

All Products (1000's Bbls.)

	1944	1945
April	954,000	1,148,000
May	900,000	1,135,000
June	969,000	1,085,000
July	884,000	1,011,000
August	883,000	1,010,000
September	902,000	954,000
October	945,000	897,000
November	992,000	901,000
December	1,093,969	969,000
1945		
January	1,066,000	917,000
February	1,124,000	947,000
March	1,068,000	962,000
April	1,148,000	851,000
May	1,135,000	864,000

Coal—Production of Bituminous and Lignite

Reports by United States Bureau of Mines—(Tons mined)

	Montana	Wyoming	Colorado	New Mexico	Utah	Washington	Other	Total
January 1946	425,000	980,000	782,000	130,000	630,000	120,000	1,000	3,068,000
February	380,000	830,000	662,000	106,000	590,000	110,000	1,000	2,679,000
March	355,000	856,000	680,000	132,000	638,000	118,000	2,000	2,781,000
April	176,000	25,000	20,000	5,000	14,000	10,000	1,000	251,000

Flour Production—In Western Mills

According to figures furnished by the Bureau of the Census. (bushels reported)

	WASHINGTON		OREGON		CALIFORNIA		COLORADO		MONTANA		UTAH		IDAHO	
	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground	Mills Report'g	Wheat Ground
September	16	2,397,880	16	1,315,306	10	909,779	18	805,434	16	697,236	23	635,587	15	423,689
December	16	2,688,544	15	1,345,888	9	922,032	18	864,160	16	738,156	23	641,053	15	387,744
January 1946	16	2,886,000	15	1,527,000	9	987,000	18	949,000	15	823,000	23	685,000	15	452,000
February	16	1,206,000	15	1,561,000	9	948,000	18	973,000	15	908,000	23	675,000	14	477,000

Cement—In Barrels

Seasonal gains in cement production throughout the West resulted in substantial increases in output at cement plants during May over figures for April, according to figures supplied by the U. S. Bureau of Mines.

PRODUCTION
(In thousands of barrels)

	—California—		Oregon-Wash.		Utah-Idaho	
	1944	1945	1944	1945	1944	1945
June	1,180	1,439	511	303	249	305
July	1,312	1,538	454	278	237	317
Aug.	1,129	1,491	446	245	291	331
Sept.	1,360	1,364	378	305	280	296
Oct.	1,439	1,431	319	346	299	304
Nov.	1,182	1,211	298	299	280	333
Dec.	1,193	1,174	328	286	249	320
	1945	1946	1945	1946	1945	1946
Jan.	1,258	1,159	269	234	173	233
Feb.	1,191	1,355	243	250	95	109
Mar.	1,226	1,629	250	298	122	248
April	1,257	1,670	268	432	150	356
May	1,396	1,745	238	397	273	413

Lumber—Cumulative

Reports on lumber production for the first 26 weeks for 1946, compared with the same period in previous years, and measured in thousands of board feet, are as follows, according to the West Coast Lumbermen's Association:

	26 Weeks 1944	26 Weeks 1945	26 Weeks 1946
Production (Pct. 1942-45 years of production)	4,121,469	3,621,892	3,055,162
Orders	4,352,006	3,848,636	2,989,006
Shipments	4,147,875	3,636,829	3,073,280

Western Pine Association figures covering Idaho White Pine, Ponderosa, Sugar Pine and associated species for 1946 through the week ending July 6, and compared with the same period for the preceding year, are as follows:

	1945	1946
Production	1,407,616	1,123,216
Orders	1,586,214	1,249,167
Shipments	1,553,604	1,241,120

Because of the strike in the Redwood lumber industry, about to enter its seventh month, no later figures than the partial figures for February have been issued, according to the California Redwood Association. February figures are:

Production	800 M feet
Shipments	2,000 M feet

Soft Plywood—Output

Source: U. S. Bureau of Census (thousands of sq. ft. %)

	Moisture Resistant	Exterior	Total
June 1945	88,928	32,355	121,283
July	60,160	25,419	85,579
August	81,348	32,085	113,433
September	62,439	27,217	89,656
October	41,040	26,422	67,462
November	34,040	24,197	58,237
December	48,831	26,631	75,462
January '46	70,352	36,795	107,147
February	62,544	35,552	98,096
March	69,960	39,035	108,995
April	79,030	41,639	120,669
May	87,825	39,459	127,284

Iron and Steel

Pig iron and steel production for the Western area of the United States are reported by the American Iron and Steel Institute in net tons as follows:

	Current Month	Percent of capacity to date	Year to date	Percent of capacity
Pig Iron:				
August 1945	135,740	56.3	1,225,096	64.9
September	104,190	44.8	1,329,286	62.7
October	105,708	43.9	1,434,994	60.7
November	86,986	37.3	1,521,980	58.6
December	120,498	50.1	1,642,478	57.9
Jan., 1946	83,979	34.9	83,979	34.9
February	40,363	18.6	124,342	27.1
March	107,605	44.7	231,947	33.2
April	83,270	35.7	315,217	33.8
May	84,799	35.2	400,016	34.1

	Current Month	Percent of capacity to date	Year to date	Percent of capacity
Alloy Steel:				
August 1945	1,531	-----	29,645	-----
September	4,517	-----	34,162	-----
October	5,966	-----	40,128	-----
November	9,078	-----	49,206	-----
December	4,398	-----	52,348	-----
Jan., 1946	4,463	-----	4,463	-----
February	4,909	-----	9,372	-----
March	6,026	-----	15,392	-----
April	2,894	-----	18,292	-----
May	2,548	-----	20,840	-----

	Current Month	Percent of capacity to date	Year to date	Percent of capacity
Carbon Ingots, Hot Topped:				
August 1945	8,204	-----	290,358	-----
September	3,623	-----	293,981	-----
October	8,442	-----	319,095	-----
November	6,049	-----	325,144	-----
December	8,379	-----	333,523	-----
Jan., 1946	3,170	-----	3,170	-----
February	4,317	-----	7,487	-----
March	4,287	-----	11,774	-----
April	5,952	-----	17,726	-----
May	6,499	-----	24,225	-----

	Current Month	Percent of capacity to date	Year to date	Percent of capacity
Steel Total:				
June, 1945	306,862	71.7	2,333,531	81.8
August	267,468	64.1	2,600,999	79.5
September	235,173	58.3	2,836,174	77.2
October	225,796	55.6	3,059,970	74.8
November	210,866	52.2	3,270,836	72.7
December	218,569	52.5	3,489,405	71.0
Jan., 1946	172,348	41.4	172,348	41.4
February	81,680	21.8	254,028	32.1
March	248,615	59.8	502,643	41.6
April	241,054	59.9	743,697	46.2
May	237,759	57.2	981,456	48.4

*Included in total steel.

THE TREND

Despite shortages of goods and materials, warehousing space available throughout the West continues at the minimum. Average for both the Mountain and Pacific divisions of the country in May was 89.9 per cent occupied, only 2 per cent less than that of last October. Declining numbers of unemployed in the region, however, indicated that greater production with a more rapid movement of goods could be expected in the near future. Accompanying the declining unemployment figures were increases in output of electric power in eight of the eleven Western States during April forecasting more manufacturing generally in the West.

Widely Used To Keep Count!



Industry's favorite "Watchdog of Production" since 1906... Redington Counters are widely used on punch presses, pumps, screw machines, packaging machines... conveyor lines, can making and box making machinery... in fact all types of machinery... and production lines. Easy to install... 100% accurate. Write for new catalog.

Prompt Delivery

F. B. REDINGTON CO.

118 So. Sangamon St., Chicago 7, Ill.

Real Estate Loans



F H A loans are readily available on existing homes up to 80% of the appraised value. You can buy a home and pay for it in small monthly installments like rent. For example, a 20-year loan of \$6000 would cost about \$49.56 per month, including taxes, insurance, principal and interest.

Come in and talk with us
We can help you get the home
you want

**CROCKER FIRST
NATIONAL BANK**
OF SAN FRANCISCO
California's Oldest National Bank
ONE MONTGOMERY STREET
Member Federal Deposit Insurance Corporation

Two Coast Firms Cited For Safety Records

Because of their outstanding safety records two Pacific Coast industrial firms, the Permanente Cement Company and the Union Oil Company, have been awarded the Joseph A. Holmes Certificate of Honor, says an announcement of the U. S. Bureau of Mines.

Permanente was given its award for having produced 5,510,565 tons of rock without a lost-time accident. The citation also mentioned the fact that no fatal accident had occurred in the firm's quarry since its establishment.

Nine Per Cent National Retail Sales in California

Nine per cent of the nation's retail sales for 1945 were made in California for a total of \$6,709,271,000, according to an announcement by the California State Chamber of Commerce.

On a per capita basis this volume, 14.7 per cent above that for 1944, and 110.5 per cent over the 1939 figure, represented an outlay of \$760 as compared with the national per capita expenditure of \$566.

Northern Pacific Car Order Exceeds \$9,000,000

The total cost of new passenger cars and locomotives to be delivered to the Northern Pacific during 1946 will be in excess of \$9,000,000.

New equipment on order and approved for purchase includes 36 lightweight streamlined passenger coaches, 12 baggage and mail cars, six dining cars; 24 sleeping cars of modern lightweight design, and six 4500-horse power Diesel electric locomotives.

California Second in Aluminum Foundries

After losing 12 aluminum foundries that went out of business during 1945, California was nosed out of first place by Ohio for that state in the Union having the largest number of aluminum foundries. At year's end the score was California, 173; Ohio, 174, according to the U. S. Bureau of the Census.

In the year's poundage of total shipments, however, California was in fourth place with 24,735,695. Ohio shipped 102,515,161. Second, third and fourth places, respectively, were held by Michigan, Illinois and Missouri.

Wrapping Machines by Air

When Bridgford Company, Ontario, Ore., needed three packaging machines in a hurry to start its frozen food pack of vegetables, Package Machinery Company, Springfield, Mass., sent the three machines, each weighing 1,800 lbs., to Oregon by air.

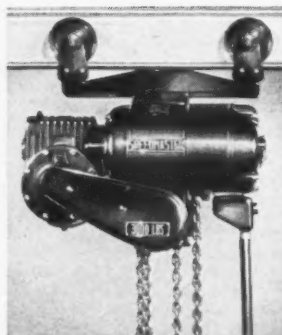
Never-Ceasing Shipments

On an average, one car of Douglas fir lumber leaves the producing areas of Oregon and Washington every five minutes, night and day, Sundays and holidays, according to the West Coast Lumbermen's Association.

Floor Pads Save

Using floor pads in freight cars results in the delivery of more salable potatoes to eastern markets by reducing bruising and injuries in transit, a two-year study by the University of California College of Agriculture has shown. The pads, used in two shipping seasons, saved one to four bags of potatoes per car.

SPEEDMASTER and CABLEMASTER HOISTS



SPEEDMASTER
Standard Heavy Duty Shop Hoist

Rugged, Reliable, Fast!

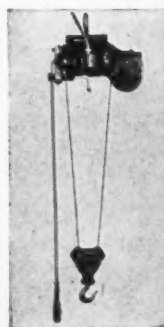
SPEEDMASTER CAPACITIES

250 lb.	2000 lb.
500 lb.	3000 lb.
1000 lb.	4000 lb.
6000 lb.	

CABLEMASTER CAPACITIES

250 lb.	500 lb.	1000 lb.
---------	---------	----------

Each CABLEMASTER especially designed for its rating. Equipped with hook or trolley mounting. Quickly attached to present monorail. Four-foot jib crane also available.



CABLEMASTER
New, Light Cable Hoist



THE MASTER ELECTRIC CO.

INDUSTRIAL EQUIPMENT DIV., DAYTON, OHIO

Machine Drives • Electric Hoists • Electric Hammers • Engine Driven Generator Plants
Portable Grinders • Big 3 (Power, Tool Operation, Concrete Vibration) Units • Tampers

THE WEST ON ITS WAY

ARIZONA

BAGDAD MINE PIT OPENED—A new open pit has been started at the "Glory hole" at the Bagdad copper mine. Some 28,600 pounds of dynamite marked the start of large-scale open pit operation at the mine. Engineers set off the explosion by using for the first time west of the Mississippi a new system of electrical firing devices which they said improve blasting efficiency. The Glory hole funnels the ore to the flotation mill.

ANOTHER ARIZONA MINE DEVELOPED—An extensive development campaign has been started at the Arizona Magma mine by the Great Western Exploration Co., headed by Nye A. Wimer of Tennessee-Schuykill Corp. Company plans sinking a 200 ft. shaft and exploration of the parallel Starlight vein, 750 ft. to the north of the Magma vein.

CALIFORNIA

STEEL FABRICATION PLANT NEARS COMPLETION—A modern steel fabrication plant to employ some 150 persons for the Osborne Engineering Co., is nearing completion on a 28-acre site on Bay Shore Blvd., near Davis Street, San Leandro. Main fabricating and assembling building is over 100x400 ft., providing over 40,000 sq. ft. of work area. R. L. (Bob) Osborne of the Osborne Machinery Co., San Francisco, and B. J. "Barney" Osborne are associated in the firm.

NEW MACHINERY PLANT—Work is under way on the \$500,000 plant expansion of the Be Ge Manufacturing Co., 885 N. Monterey Street, Gilroy. The all-steel production unit manufacturing plant to produce new machinery lines is the initial unit of the expansion program.

PACIFIC COAST AGGREGATES EXPANSION—A million and a half expansion for Pacific Coast Aggregates has begun with the building of the Elliott processing plant at Pleasanton at a cost of \$600,000, and letting of the railroad contract for its manufacturing plant estimated to cost \$250,000, to be located near Tracy. Pleasanton plant is equipped with concrete bunkers with steel superstructure, concrete tunnels, twin conveyor lines, with capacity of 600 tons an hour. Tracy plant is for Kerlinger concrete ingredients manufacturing, with capacity of 300 tons an hour.

PARAFFINE CO. BUILDS MILLION DOLLAR PLANT—A new million-dollar asbestos cement products plant will be erected by The Paraffine Companies, Inc., through its subsidiary, Plant Rubber & Asbestos Works. It will adjoin Plant Rubber's existing Redwood City manufacturing department, where magnesia insulation products are made.

BAY AREA EXPANSIONS INCLUDE—W. P. Fuller & Company, South San Francisco, awarded contracts for the construction of one concrete and steel and one brick building at a total of \$75,000 for expansion of their facilities. E. I. du Pont de Nemours & Company, Inc., South San Francisco, awarded contract for a \$40,000 factory addition as the first step in a several hundred thousand dollar program to more than double the capacity of their paint and lacquer factory. R. C. Dickinson & Company, Inc., Santa Clara, plans construction of a prefabricated house factory estimated to cost \$250,000, on a site purchased in the Passetta Tract. Plant will employ 200 persons. Otzen Brothers Bottling Company, Alameda, will construct additions to bottling plant estimated to cost \$77,000. Mathews Conveyor Company, San Carlos, will build a new plant estimated to cost \$137,000 to manufacture material handling and food processing equipment. Charles P. Wagner & Brother Company, Hayward, plan construction of a new package food products plant to cost \$73,000. The company's home office is in New Orleans. Sealy Mattress Company, Oakland, has been granted CPA approval to construct a \$45,000 addition to their plant. Gibson Wine Company, Elk Grove, Sacramento County, will erect four buildings for a new winery to cost \$266,000.

NEW FACTORY BUILDING—Avoset, Inc., 465 California Street, San Francisco, has awarded the contract for its new factory building costing \$750,000 at Nyssa, Ore. It will be a 1½-story concrete building.

Plenty of Places...

Where this 3-in-1 Workhorse Will Save Time and Work



Only
\$149⁵⁰
f. o. b.
Albion, Mich.

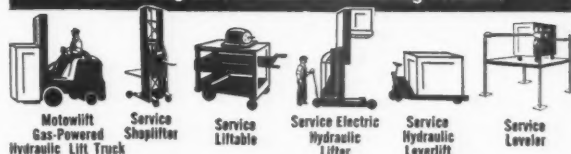
SERVICE LIFTABLE

Do you have jobs requiring moving heavy pieces, dies, assemblies vertically from one level to another—and then horizontally from one place to another?

There's plenty of such work in almost every plant—work done easily and quickly with the Service LIFTABLE. It's a work bench, truck and lifter all-in-one. Lowered, the top is 28" from floor . . . raised, it's 42". Capacity 2000 lbs. . . chain and screw lifting mechanism . . . all welded construction . . . locks positively at any height . . . readily portable on swift-rolling Forgeweld Casters and Wheels. Available also with rubber or plastic wheels at slight extra cost. Cut handling costs—put LIFTABLES in your plant.

Get Descriptive Circular—Write Today

Cost-Saving Service Material Handling Products



SERVICE CASTER & TRUCK CORPORATION

Executive Offices: Albion, Mich., and Somerville 43, Mass.
REPRESENTATIVES IN ALL PRINCIPAL CITIES

**90 YEARS OF
"KNOW-HOW"**

**BACK UP GREENBERG
"TITE-TEST"**

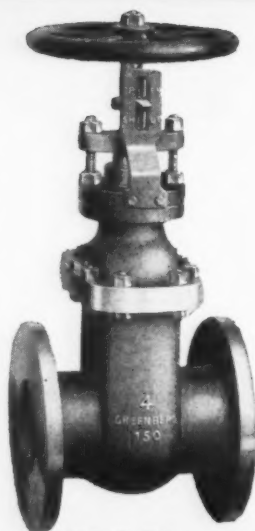
**BRONZE
Gate VALVES**

for "ASSURED RESULTS"!

**NOW available
through YOUR JOBBERS
... from Vancouver to
San Diego... the name
GREENBERG is your
Assurance of Quality!**

**FOR STANDARD AND
EXTRA HEAVY PRESSURES**

Gate Valves 1½" to 10"
Globe, Angle and
Cross Valves 1½" to 8"
Check Valves 1½" to 10"
Hose Valves 1½" to 6"



CAT. No. 762

STABILITY
Since 1854

M. GREENBERG'S SONS
765 FOLSOM STREET ★ SAN FRANCISCO, 7

THE WEST ON ITS WAY

TO MANUFACTURE INSULATION MATERIALS—Utilizing by-products from Henry J. Kaiser's iron and steel plant at Fontana, California, the Mineral Wool Insulations Company announced today the start of a \$100,000 building program to manufacture insulation materials on property leased from Kaiser Company, Inc. Owned by local interests, the new company expects to get into production by September 1 and will serve the Western States and markets in the Orient. Plant capacity is designed for annual capacity of 50,000 tons with initial operations calling for 20,000 tons.

CONSTRUCTION MATERIAL—Pacific Coast Aggregates, Inc., starts \$3,500,000 expansion program in S. F. Bay Area, including \$1,500,000 plant at Eliot near Livermore; a similar \$500,000 plant at Tracy; a \$200,000 warehouse installation in Oakland at 92nd Ave. and San Leandro Blvd.

SHIPYARD CONSTRUCTION—San Diego harbor is to have \$2,000,000 expansion of tuna boat building facilities. Organizations expanding facilities are Lynch Shipbuilding Co., National Iron Works, San Diego Marine Construction Co., Campbell Machine Co., and Associated Repair Basin.

CAN COMPANY EXPANDS—Pacific Can Company's \$2,000,000 expansion program underway includes: acquisition of 32 acres in Sacramento for future development; 6½ acres in Los Angeles for erection of new plant; construction of new plant on 25-acre site in San Leandro, and a \$250,000 machine shop at Santa Clara.

ANOTHER WAR PLANT SOLD—The Hardman Tool and Engineering Company of Los Angeles, Calif., purchased the aircraft parts manufacturing plant and land of Industrial Fabricators Company, Burbank, Calif., from War Assets Corp., for \$135,000, with the machinery and equipment to be sold on the basis of the Clayton formula. The company plans to manufacture airplane equipment, present employment being 136 and expected employment 250.

NEW PLANT FOR PAPER BOX COMPANY—Royal Paper Box Company has ordered construction of a \$200,000 2-story, reinforced concrete factory building at southeast corner of Pico Blvd. and Soto Street, Los Angeles.

NEW ELECTRICAL PRODUCTS BUILDING—Electrical Products Co., 1128 Venice Blvd., Los Angeles, has awarded the contract for its new gunite and corrugated steel factory and office building at 1120 N. Main St., L. A. It will be 250x300 ft. in area, with composition roofing, plate glass, concrete slab floors and will cost \$300,000.

RADIO RECEIVERS PLANT—Sylvania Electric Products, Inc., is constructing at Riverside a new plant for assembly of home radio receivers. Plant is of reinforced concrete construction. It will handle assembly of Colonial Radios for entire West Coast.

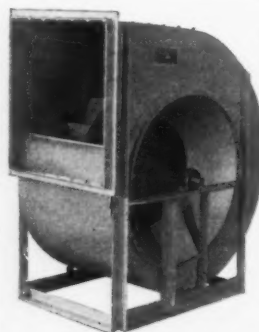
AMERICAN CAN EXPANSION—Work is under way on a \$1,000,000 construction and equipment program in Los Angeles to double American Can Company's output there of fibre milk containers.

RETOOLING—New equipment and retooling program in amount of \$150,000 is being carried out by the Pacific Coast Engineering Company in its plant in Alameda.

CANNING PLANT—The newly formed Del Paso Canning Company is constructing a peach and tomato packing plant at Almond and Globe Street in North Sacramento.

ALADDIN BLOWERS

**WILL HELP SOLVE YOUR
VENTILATING PROBLEMS
Efficiently and Economically**



Our line includes the "BB" fans of the backward curved blade type and the "FC" fans of the forward curved blade type for general ventilation. The "EX" fans for exhausting and conveying dust, fumes, shavings, etc. "RB" fans for general exhaust duty where there is danger of "blade loading" due to grease, etc. "HP" fans for small volumes at higher pressures.

Write Us About Your Dust or Ventilating Problems
ALADDIN HEATING CORPORATION
2222 SAN PABLO AVE. OAKLAND, CALIF.

U. S. MARITIME SERVICE RETAINS YARDS—The Bethlehem-Alameda Shipyard and the Kaiser yards in Richmond as well as the Kaiser Corp. yard at Vancouver, Wash., will be retained permanently for construction and repair of merchant vessels.

FOOD MACHINERY TO MAKE MORE "WATER BUFFALOES"—Award of a Navy contract providing for postwar development work on the famous "Water Buffalo" amphibious tank has been made to Food Machinery Corporation, wartime producers of the vehicle. J. M. Hait, designer of the tank, will supervise the program at San Jose, California.

UTILITY BUYS TWO FIRMS—Utility Appliance Corp., Los Angeles manufacturer of evaporative air coolers, fans, blowers and gas-fired heating equipment, has purchased Gaffers & Sattler, Los Angeles, and Occidental Stove Co., Irvington, Calif. The newly acquired plants will be operated as divisions of Utility Appliance Corp., with existing production and sales organizations. Executive and administrative operation will be consolidated in the Utility organization, but each division will continue to produce former product, under existing brands.

AIRQUIPMENT COMPANY EXPANDS OPERATIONS—The Airquipment Company, Burbank, California, manufacturer of ground handling equipment and special tools for aircraft, has moved to new and larger quarters at 2820 Ontario St., Burbank. The new plant provides approximately 125,000 square feet of space for volume production of Airquipment products.

NEW INDUSTRIES IN LOS ANGELES INCLUDE—S. K. Smith Co., Chicago, has purchased a site at 4400 Sunset Blvd., on which will be located a 2-story building to contain 60,000 square feet for manufacture of art leather goods. Solotone Corp., 2311 W. Pico Blvd., has begun manufacture of coin-operated music boxes. H. Kramer & Co., Chicago, has purchased property in the Bandini district, between 52nd and 58th Place, and will erect a brass smelter. Triple A Metalcraft Corp., 3421 E. 22nd Street, has begun production of cast aluminum cooking utensils. L. A. Magnesium Co., 5801 Alcoa Ave., will shortly occupy a building being erected at above address for manufacture of magnesium toilet seats. Genco Heel Co., St. Louis, is constructing a building at California St. and Duarte Rd., Monrovia, where 11,000 square feet will be available for local production of composition heels. Lustra Prefab Mfg. Corp., 8516 So. Figueroa, has now available small sheet aluminum structures, ready to be assembled. Only one model is being produced now, with others planned. System Stamping Service, 3293 E. Slauson Ave., is constructing a building at this address, which it will occupy about July 1st, for manufacture of metal stampings. D.D.T.-Lite, Inc., 3757 Wilshire Blvd., with plant in Burbank, has begun manufacture of D.D.T. insecticide lights.

Alpha Pallet Co., 4355 E. Florence Ave., Bell, is making pallets, flats, and skids for industrial trucks. Richchrome, 831 So. San Pedro St., has started manufacture of bar and restaurant equipment. David Richman is the owner. F & E Mfg. Co., 129 W. 37th Pl., is making concrete block machines and concrete mixers. Sherry-Dunn, Inc., 524 La Cienega Blvd., has begun production of cosmetics, perfumes, etc. Copper House, 521 E. 7th Street, is making copper, brass, china, and wood lamps. Jean Burnham, Ceramics, 1905 Riverside Dr., Glendale, has started manufacture of flower holders and other ceramic articles under the trade-name of "Laceramics." Rayburn Mfg. Co., 3201 S. Main St., has been set up to do metal tube bending. Shine-Boy Mfg. Co., 59 E. Orange Grove Ave., Burbank, is making shoe holders. O'Keefe & Merritt Co., 3700 E. Olympic Blvd., has purchased property in the Central Manufacturing District on which to build a sheet steel mill which is expected to be in full operation by early next year. Annual capacity will be 50,000 tons, part of which will be used for its own use in manufacture of refrigerators, stoves, etc.

EXPANSIONS OF LOS ANGELES INDUSTRIES—Standard Gypsum Co. of California, 1301 Water St., Long Beach, is constructing a new plant and modernizing an existing plaster mill. Gypsum board products will be made, including gypsum lath, wallboard, and exterior sheathing. A. Moody & Co., Inc., 154 E. 57th St., has purchased a building at 53rd and San Pedro Sts. Site consists of a 25,000 square foot yard area, with part one and part two-story structure of 85,000 square ft. Occupancy is expected July 1. Added to company's production of box springs, cotton and innerspring mattresses will be fiberglass mattresses, which will be sold under the trade-name of "Glas-Sleeper." Advance Auto Body Works, 6155 S. Eastern Ave., has acquired 3½ acres at 4900 Anaheim-Telegraph Rd., and will construct a building of 67,000 square feet. Company makes truck and trailer bodies and equipment. Great Western Biscuit Co., 1300 Goodrich Blvd., is having a plant erected at 10305 National Blvd. New site will afford 45,000 sq. ft. for increased manufacture of soda crackers and cookies. U. S. Porcelain Enamel Co., 4635 E. 52nd Dr., is adding 30,000 sq. ft. of floor area, as well as a new metal cleaning building of 9,750 sq. ft. Company makes miscellaneous porcelain items, porcelain enamel signs, steel cabinets, heater cabinets, etc. Universal Die Casting Co., 5001 So. Santa Fe Ave., has under construction a new plant at 5275 Randolph St. New location will afford 35,000 sq. ft. of floor area for production of die castings for automobiles and home appliances, as well as for the



The firms you want will never hide



If you turn quick to the Classified

Your search is ended...quick as a wink... if you turn first to the Classified. 'Most everything you'll ever need is listed, so why wade through a lot of different guides and directories? Remember, the Classified is the complete buyer's guide, and it's right at your elbow.

**You'll find it faster in the
YELLOW PAGES
of your Telephone Directory**

The Pacific Telephone and Telegraph Company

Southern California Telephone Company

COUNT 10

for a Sure bet in Bandsaws

Here are ten main features to help you judge how well the Johnson bandsaw can serve you . . .

1. **Large Capacity:** 10" High x 18" Wide. Cuts small and large diameter stock — smoothly, evenly.
2. **Three Point Base:** Firm anchorage always assured. Bed cannot absorb strains caused by uneven floors. Twistproof.
3. **Rigid Box-Type Frame:** No wearing through friction. Oversize bearings and shafts throughout. Blade tension is uniform. Guides are wide — stay adjusted.
4. **Bed is Wide and Deep:** Accurately machined — all component parts work from common machined surface. Upper frame moves on large pivot bar through bed.
5. **Quick Acting Vise:** A time saver — takes a moment to lock workpiece in place.
6. **Hydraulically Controlled:** Frame descends gently on oil cushion. Hydraulically stopped at any height.
7. **Four Speeds:** 35, 90, 130, 190 feet per minute. You are sure of the correct speed for best results and latest production.
8. **Centralized Controls:** No needless steps — all operated from front of machine.
9. **Long Blade:** 11' 5" long. Never heats. Most economical length to buy.
10. **Portable:** Self-contained. Plug in anywhere. Casters available.



WRITE FOR
BULLETIN

JOHNSON MANUFACTURING CORP.

621 CHRYSLER BLDG.

NEW YORK 17, N.Y.

Faster Handling OF PIPE, PLATE, STRUCTURALS

PLATE GRIPS — Safe, positive grips in a variety of sizes for handling vertical plates or upending horizontal plates and assemblies.

PIPE TONGS — Heavy duty tongs for easy handling of pipe, billets, bars, timber. Locks in open position. Picks up from floor surface.

PLATE HOOKS — Handle one or more horizontal plates. Used in sets of 2 or 4. Two styles.

RAIL TONGS — Handles large or small rail. Two sizes with 3" or 4½" jaw.

Write for Illustrated Catalog

DOWN'S CRANE & HOIST CO.

MECHANICAL ENGINEERS

340 W. VERNON AVENUE
LOS ANGELES 37, CALIF.

Electric Cranes • Hand Cranes • Jib Cranes • Sheaves • Sheave Blocks
Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane
End Truck Units • Jib Crane Fittings • Automatic Mechanical Load Brake
Crane Hook Blocks

THE WEST ON ITS WAY

plumbing industry. Eagle-Lion Productions, 9538 Brighton Way, Beverly Hills, has announced a \$100,000 reconstruction program to include new wardrobe buildings, an employees' dining room, etc. Chas. Bruning Co., Inc., 919 Maple Ave., is constructing a building at Cahuenga Blvd., Willoughby Ave., and Cole St. This will contain 32,500 sq. ft. for production of blueprint paper and engineers' supplies. Witchcraft Mfg. Co., headquarters at 111 W. 7th St., has purchased property at 3605 Hayden St., Culver City, and is erecting a 30,000 sq. ft. building for manufacture of window curtains. States Batteries, Ltd., 1627 Santee St., has acquired two acres of land at 5735 W. Jefferson Blvd., and is constructing a 24,000 sq. ft. building for increased manufacture of storage batteries for automobiles and trucks.

MORE LOS ANGELES EXPANSIONS—Wm. J. Markowitz, 719 So. Los Angeles St., expects to be in a new building at 1365 So. Broadway about the middle of July. New location will afford 21,500 sq. ft. for production of misses' dresses, under the trade-name of "Jules, California." Southern Heater Co., 133 E. Palmer St., Compton, is constructing a building to add 20,000 sq. ft. to manufacture of domestic and industrial water heaters. Auburn Furniture Mfg. Co., 560 No. Hawthorne Blvd., Hawthorne, is erecting a building at 10841 Hawthorne Blvd., Inglewood. New location will afford 8,000 sq. ft. for manufacture of upholstered living room furniture. Short Wave Plastics Forming Co., 2921 W. Alameda St., Burbank, will construct a \$20,000 building at this address for increased production of industrial high-frequency wood-welding equipment. M. Carrenti Copper & Sheet Metal Works, 1855 No. Main St., is constructing a 4,500 sq. ft. building at 2101 No. Main St. Company makes vintners' and distillers' equipment and does sheet metal work. Central Tool Co., 586 San Fernando Rd., will erect a building at 3525 E. 25th St. to contain 4,000 sq. ft. for manufacture of turret lathe products. Globe Iron Foundry, 5649 E. Randolph St., has under construction an addition of 3,000 sq. ft. which will afford 9,000 sq. ft. for production of grey iron castings. Phillips Pattern & Mfg. Co., 5875 So. Boyle Ave., is having a 3,000 sq. ft. building erected at 4837 Patata St., Bell, to which location it will move about July 1. Company makes patterns, as well as various metal items such as sun dials, bookends, nameplates, etc. Jackson Iron Works, 4839 Patata St., Bell, is adding 3,000 sq. ft.

MILLION DOLLAR ASBESTOS PLANT—A new million dollar Asbestos Cement Products plant will be erected by The Paraffine Companies, Inc., adjoining Plant Rubber's existing Redwood City manufacturing department. Output will include asbestos cement siding shingles, roof shingles, corrugated asbestos siding and lumber or flat board, fire-proof and lasting. Construction is starting immediately.

SYPHON COMPANY TO BUILD—Construction of a factory building for Penetrator Syphon Company, at Dixon, is planned.

NEW FACTORY—Plans are being completed for construction of a two story factory and office building costing \$50,000, and 50 x 131 ft. in area, at 2619 S. Hill Street, Los Angeles, by Adele California-David Isaacs, 818 S. Broadway, Los Angeles. Building will be reinforced concrete, wood roof, composition roofing, steel sash.

FACTORY TO BE BUILT—A two story factory building, 50 x 131 feet is planned for Murray Goldstein, 816 S. Broadway, Los Angeles, at 2621 S. Hill Street, Los Angeles. The building, costing \$51,000, will be of reinforced concrete construction.

FACTORY—Plans are being completed for construction of a two-story factory building 50 x 131 feet at 2615 S. Hill Street, Los Angeles, for Morris Nagel, 818 S. Broadway, Los Angeles. Cost is estimated at \$50,000, and will be of reinforced concrete construction.

WAREHOUSE FOR BEKINS—Construction of a five-story reinforced concrete fireproof warehouse with mushroom type columns supporting flat slab floors, with two large elevators, glass brick front, rail spur track, has begun for Bekins Van & Storage Co., 13th and Mission Streets, San Francisco. The warehouse will cost \$150,000.

COLORADO

RESEARCH & ENGINEERING BUILDING TO START—Construction will begin shortly on the research and engineering building for Gates Rubber Company at 1025 South Broadway, Denver. Costing \$260,000, the building will be a 3-story and basement, reinforced concrete building, 199x101 feet in area.

TELEPHONE BUILDING BEGUN—Work has commenced on the new \$100,000 telephone exchange building for the Mountain States Telephone & Telegraph Company at Rangely. When completed long distance and local service will be extended. More lines are to be opened between Rangely and Craig and Denver.

UNITED AIR LINES CLOSES DENVER BASE—The maintenance base in Denver of the United Air Lines has been closed and shop employees and equipment returned to Cheyenne, Wyo. Lack of housing in Denver caused the return, Western Air Lines officials said.

IDAHO

BOISE STEEL COMPANY PLANS MUCH WORK—Articles of incorporation have been filed in the secretary of state's office by the Idaho Steel Products, Inc., of Boise, capitalized at \$150,000. Company purchased the Sawtooth Company's new shop and steel warehouse near the fair grounds and will continue to operate the manufacturing and machinery repair business. J. W. Buckingham is pres., Cecil W. Grow, v.p. and treas.; Robert Sproat, sec.; and Walter Yarbrough, sales mgr. All are Boise men.

MINING COMPANY FILES ARTICLES — Brimstone Mining Co., Moscow, has filed articles of incorporation with the secretary of state at Boise. Capital stock is listed at \$300,000, and incorporators are T. P. Jones and Earl S. Cassidy, both of Seattle, and R. P. Drury, Helena, Mont.

THREE MILLION DOLLAR CORPORATION—Vulcan Silver Lead Corp., Wallace, Idaho, has filed articles of incorporation with the Idaho secretary of state. Capital stock is listed at \$3 million, with Joseph T. Hall, New York City, and Harold J. Hull and Margaret Denny of Wallace as incorporators.

NEW GOLD MINE FIRM—Articles of incorporation for the Goldback Consolidated Mines of Murray, Idaho, have been filed with the Idaho secretary of state. Capital stock is listed at \$300,000 and incorporators are Marvin C. Meddock, Spokane; A. T. Slawson, Murray; Walter Haldi, Opportunity, Wash., and William A. Krippachne, Puyallup, Wash.

BACK TO SUGAR—Amalgamated Sugar Company's factory at Burley, which during the war processed and dehydrated potatoes, will refine sugar this year.

WASHINGTON WATER POWER TO BUILD LINE—Construction of a 39-mile, 60,000 volt transmission line to Washington Water Power Co. to serve Pierce and Headquarters, Idaho, is planned. The line, originating at Orofino, will serve electric power wholesale to Pierce Power & Light Co., and retail to residents of Headquarters.

MONTANA

LUMBER PLANT FOR DARBY—Articles of incorporation for Storey & Flightner, Inc., a concern which will manufacture lumber products at Darby, have been filed. Incorporators are Ernie L. Wales, Frank Storey, R. D. Flightner and E. F. Wales.

PLYWOOD PLANT TO START SOON—Construction of the lumber and plywood sections of the Idaho-Montana Pulp & Paper Co. mill at Polson will be started shortly. Estimated cost of the two units was placed at \$600,000. Company plans a pulp mill later which will cost some \$3,000,000. W. F. Emory, Boise, is company pres.; John L. Campbell, Missoula, and J. J. Reese, Columbia Falls, vice-pres.; and Lyle W. Wright, Missoula, sec.-treas.

POLE PLANT WILL BE IN OPERATION BY FALL—The Mac-Gillis & Gibbs Co. pole plant at White Sulphur Springs will be in full operation by fall. Present plans call for employment of about 350. Principal activity will be in production of poles although the plant will also produce pulp wood. A pole peeler has been installed. Gil Hindle is the local supt. of the company.

TEXAS CO. OPENS BOWDOIN DOME OFFICE—The Texas Co. has opened an office at Malta, and the company plans beginning its long-projected deep test at Bowdoin dome, one of the largest regional "bulges" in the whole nation. The company controls an immense amount of acreage on the structure. It is expected to test the Ordovician formation which contains the famed Wilcos sand.

WAR-BABY MINE A SUCCESS — Callahan Zinc-Lead Company's "war baby" mining operation, the Mount Hope zinc-cadmium mine, 25 miles n.w. of Eureka, is becoming a major producer. A 250-ton selective flotation unit produces a zinc concentrate from which cadmium in commercial quantity is removed by electrolytic precipitation and distillation at the Great Falls zinc plant of Anaconda Copper Mining Co.

BACK TO THE GOLD MINES—The Herbert Gold Mines, near Libby, Mont., plans resumption of operations in the spring. Property has been opened by two tunnels and considerable surface trenching has been done.

Maas

The Only Manufacturer of
Phosphates and Phosphoric
Acid In The Entire West

BRINGS YOU

Maas PYRO

(Tetrasodium Pyrophosphate)

Phosphates are a good contribution to any
cleaning compound. Write today. Learn the
many and varied ways you can use phosphates.

Write for technical catalog now.

A. R. MAAS CHEMICAL CO.

4570 ARDINE ST. • SOUTH GATE, CALIF.



"ARMED FOR CHEMICAL SERVICE"



Highly Skilled Precision Turning,
Milling, Drilling and Threading,
Tapping of parts within .001 tolerance.

We will manufacture your item or
buy patents outright.

Modern Machinery. Exacting Quality

YOU CAN
DEPEND
ON

TURRET
AND
ENGINE LATHE
PRODUCTS

Phone THornwall 1131

De Young Bros. MACHINE SHOP

8721 METTLER STREET • LOS ANGELES 3, CALIFORNIA

SAVE CASH WHEN YOU CARRY with the NEW *WHEEL-EZY*

*The new Plate Nose Wheel-Ezy Hand Truck lends new efficiency to case and keg handling chores. Its solid nose facilitates loading, carrying and unloading... arc-welded one-piece frame will stand up under severest conditions. Moves 500 lb. load easily... step-climber feature smooths movement up and down steps and curbs.

Order a solid nose Wheel-Ezy truck equipped with the new General Pneumatic Wheels with demountable rubber tires which save floors and breakage... speed the job. Easily serviced, this wheel is simply yet soundly designed.

Wheel-Ezy trucks and wheels are available in a variety of types. Send for more data today.

— DISTRIBUTED BY —

The Horsley Co., Ogden, Utah.
Murry Jacobs Co., Seattle 4, Wash.
M. E. Canfield Co., Los Angeles 13, Calif.
Murray Sales Co., Denver 4, Colo.
E. C. Buehrer Assoc's., San Francisco 7, Calif.
Oregon Handling Equipment Co., Portland 9, Ore.



Manufacturers of
STEEL FORGED CASTERS • TRUCKS • CONVEYORS • POWER BOOSTERS

The Rapids-Standard Co., Inc.

Sales Div.—374 Peoples Nat'l Bldg., Grand Rapids 2, Mich.

10,000 Hours Continuous Running without a Stop!

SEVENTEEN small Dieing Machines were operated by a Chicago plant. Twelve were oiled by hand, shut down every four hours for lubricating. Bearing failures were frequent, each break down causing 8 to 16 hours lost production, plus expense for new bearings and repairs.

Alongside were five Farval equipped machines. They ran continuously, 24 hours a day for 14 months without a shutdown! And the bearings were still perfect. Maintenance costs were slashed. Production boosted.

Now, all machines in this plant—over 200—are Farval-equipped. Farval delivers oil or grease under pressure to a group of bearings from one central station, in exact quantities, as often as desired. Farval—the Dualine System with the Positive Piston Displacement Valve—that has but 2 Moving Parts—is Fully Adjustable—and with a Tell-tale indicator at each bearing to show the job is done.

Savings comparable to the above can be made on your equipment with Farval. Write for Bulletin 25. The Farval Corporation, 3269 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm & Gear Company, Industrial Worm Gearing. In Canada: PEACOCK BROTHERS LIMITED.



**CENTRALIZED SYSTEMS
OF LUBRICATION**



**FARVAL—Studies in
Centralized Lubrication
No. 79**

THE WEST ON ITS WAY

NEVADA

U. S. VANADIUM BEGINS INSTALLATION WORK—Installation work in the U. S. Vanadium leased facilities of the Basic Magnesium project at Las Vegas are under way. The company will process tungsten concentrates at the plant, and will employ some 100 men. The J. M. Montgomery Co. is operating the plant for War Assets. H. H. Gillings is manager for the Montgomery concern.

ANACONDA LOOKING FOR NEW COPPER—Anaconda Copper Mining Co. is reported to have acquired full interest in the Yerington copper property in Lyon County, Nevada, where exploratory work has indicated approximately 50 million tons of ore having a copper content of 1.02 per cent.

RICHFIELD BULK PLANT SOLD—The Richfield bulk plant in Reno has been purchased by Archie Lani of Elko.

NAVY TO CLOSE FALLON FIELD—The \$3,000,000 Navy installation, Fallon Naval Air base, is scheduled for closing Sept. 1, as part of a cutback of 97 Naval air installations.

BUILDING PLANT TO BE ENLARGED—Enlargement of the present plaster mill and wallboard plant of the Blue Diamond Corp. at Arden, at a cost of \$130,000, is about to begin. Housing facilities for employees are also contemplated.

CONCRETE BLOCK PLANT WILL OPEN—Concrete Tile & Block Co. will manufacture building tile and blocks in its location at Winnemucca. Blocks will be made from sand and gravel from the area and concrete shipped to Winnemucca. Tom Hevner and W. W. Steidley are owners of the plant. They contemplate a larger plant as soon as the first is operating.

COMPRESSOR INSTALLED AT FLOWERS PROPERTY—A new compressor has been installed at the W. H. Flowers property in Meadow Canyon, 60 miles north of Tonopah. A tunnel is being extended to open and explore a quartz body.

TO PROCESS PERLITE—First tests made with a new type pilot furnace for processing perlite into insulation material have been completed at Hawthorne. Perlite is found in large quantities and of high quality in the Aurora mining districts of western Mineral county. Ben H. Donnelly, D. C. Finlayson and associates constructed the plant. Several local business men are supporting the project with a view to developing it into an important industrial operation.

TEXAS GULF SULPHUR TO BUILD PILOT MILL—Construction of a pilot plant at the Leviathan sulphur property in Alpine County, 35 miles west from Minden, is reported to be planned by Texas Gulf Sulphur Co. Deposits are to be mixed in open pits with power shovels. Some \$500,000 was paid for the Leviathan property.

OREGON

NEW PORTLAND COMPANIES INCLUDE—McRae-Phillips Co., 2344 N. Columbia Blvd., producing household furniture. Modern Machine Works, 4241 S.E. Hawthorne, doing welding and machine work. Moore Douglas Machine Works, 5037 S.E. Lafayette St., operating machine shop. Mount Tabor Sheet Metal Works, 5012 S.E. Hawthorne Blvd., new sheet metal fabrication plant. Multi-Craft Plastics, 3041 N. Williams, making models and plastic products. Nelson Equipment Co., 5251 S.E. McLoughlin Blvd., new building, estimated cost \$140,000. Oregon Grange Wholesalers, 1104 S.E. Taylor, machinery repair and storage building, estimated cost \$86,000.

PORTLAND FIRM EXPANDS—General Tool Co., N.W. 15th and Flanders, remodeling and enlarging plant, estimated cost \$50,000.

NEW LUMBER MANUFACTURING PLANT—Olds Lumber Co., Sherwood, Ore., has completed a new lumber manufacturing plant.

NYSSA BOOMING INDUSTRIALLY—McKesson & Robbins plans to build a \$1,500,000 plant in Nyssa. New plant will manufacture penicillin and milk sugar to coat pills, requiring some 300,000 lbs. of milk daily. Company will also make Avoset cream. Site has been purchased and two apartment houses costing \$50,000 each will provide housing for 175 permanent workers. Other new Nyssa construction includes a \$500,000 expanded plant and acid plant by the Amalgamated Sugar Co.; \$350,000 processing plant by Idaho Canning Co., and a \$300,000 plant by Saunders Alfalfa Mill to dehydrate alfalfa.

POWER LINES—Approval of \$215,000 for additional electric power line construction for the Big Bend Electric Co-op in rural areas outside Ritzville, Oregon, has been announced.

TELEPHONE EXPANSION—Pacific Tel. & Tel. Co. is spending over \$200,000 in construction for expansion and improvement of telephone service in the Klamath Falls, Eugene and Tillamook area.

OIL COMPANY CONSTRUCTION—Union Oil Company is expending \$175,000 in new construction of oil docks and service stations at Astoria and Portland.

CHEMICAL WAREHOUSE—Van Waters & Rogers, Inc., raw materials jobbers, have awarded contract for over \$150,000 for construction of warehouse and offices at Portland.

ROOFING PLANT—Pioneer division of Flintkote Co. plans immediate construction of roof products manufacturing plant at cost of \$500,000 at Portland.

DAIRY PRODUCTS PLANT—Avoset, Inc., of San Francisco to construct a \$750,000 plant in Nyssa for production of Avoset, sugar of milk, casein and other specialty dairy products.

WASHINGTON

FURNITURE MANUFACTURING PLANT OPERATING—The Gregory-Butler Furniture Co. has begun operations at its new location, 3115 South Union Avenue, Tacoma. The firm specializes in making medium-priced solid hardwood furniture, chiefly bedroom items and tables. Howard E. Gregory is pres. and E. C. Butler, v.p.

POTATO CHIPS AND POPCORN—United Foods, Inc., is now in operation at its new factory building in the 3400 block on South 35th St., Tacoma, manufacturing potato chips and popcorn. It is an affiliate of Nalleys, Inc. Firm uses 20,000 pounds of Washington grown potatoes daily.

NEW PRODUCTS IN TACOMA ARE—Marine Research Corp. is producing 8, 10, 12 and 14-foot plywood rowboats of original design; the Straighton log peeling machine is being manufactured by Star Iron & Steel Co. and Tacoma Engineering & Machine Works; the "Lady Clipper," a 14-foot plywood outboard motor boat is being produced by Sigler Bros.

MORE ICE FOR SUMMER—South Tacoma Ice Co. is remodeling and plans to double its ice capacity in the immediate future.

NEW ALUMINUM AND MAGNESIUM FOUNDRY—Western Light Metals, Inc., is putting into operation a modern aluminum and magnesium foundry in Spokane. Equipment will include the latest in molding machines, melting furnaces, core and heat treating ovens as well as a physical laboratory, chemical laboratory, and X-ray equipment. C. L. Wheeler, vice president of the company, says the company intends to supply highest quality aluminum and magnesium castings at competitive prices.

PLANS BEING COMPLETED—Plans are being drawn for the \$1,000,000 mill plant of Seidelhuber Iron & Bronze Works, 1421 Dearborn St., Seattle. Construction calls for steel and reinforced concrete mill plant, 200x1,200 ft., with five oil-fired furnaces, office building and warehouse.

"Serving the Needs of Western Industry"

J. T. Cooper Steel Co. STRIP STEEL

in gauges from .001 to .187 and widths
from 3/16" to 24"

SHEETS UP TO 60"

Limited stocks available for immediate delivery

4800 Corona Ave., Los Angeles 11, California



**You'll Save 30%* or more
by using only GENUINE
Clipper Belt Hooks with
Modern Clipper Belt Lacers**

*TIMKEN ROLLER BEARING CO. AND OTHERS
EFFECT THIS SAVING IN BELT LACING COST

In over 30 years experience manufacturing belt lacing equipment *exclusively*, Clipper has developed the world's finest belt hooks. To get the best service from these top quality hooks apply them with a modern belt lacer such as the Clipper No. 9 Portable. This combination will save you money. See your Mill Supply Jobber for demonstration.



No. 9
Portable Lacer

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN



ASK FOR THIS BULLETIN

**SHOWS YOU
HOW...**



- ONE PIECE OF EQUIPMENT—
- TRANSPORTS WORK
 - ELEVATES WORK TO PRESS BED LEVEL
 - POSITIONS WORK
 - TRANSFERS WORK TO DIFFERENT LEVELS
 - LOADS AND UNLOADS MOTOR TRUCKS
 - SUPPORTS OVERHANGING WORK

HERE are new, ingenious answers to many material handling problems found in almost any plant, provided by a *single piece of equipment*—Lyon-Raymond Portable Hydraulic Elevating Table. Shows labor-saving applications in actual shop views. Full details of equipment for particular operating conditions, featuring unusual adaptability, also convenience and safety provisions. Special variations (illustrated) offer suggestions your methods engineers may find helpful. More than just "descriptive literature," this bulletin offers real *working information*. Write for your free copy today.

LYON-Raymond Corporation
522 MADISON ST. - - - GREENE, N. Y.

DO MATERIAL HANDLING COSTS keep you from being COMPETITIVE?



Note two center bands for extra strength on Speedways. Model 15-SW-10.

Represented by experienced material handling equipment engineers in all principal cities.

STANDARD MODELS

12", 15", 18" Widths.

5' & 10' Straight Sections.

6 or 8 or 10 Wheels Per Foot.

45° & 90° Reversible Curves.

Adjustable Stands from 12" to 78".

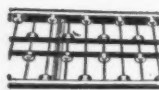
INVESTIGATE!

Write for free illustrated folder.



1248 NIAGARA ST., BUFFALO 13, N. Y.

SPEEDWAYS—the all purpose low cost gravity case conveyors—cut down your material handling costs—save time, save manpower—reduce your selling price!



Speedways is the cheapest, quickest, shortest distance between two points!

THE WEST ON ITS WAY

POWER FIRM TO REBUILD NACHES PLANT—Work will be started immediately on a \$250,000 reconstruction program for the Pacific Power & Light Company's Naches hydro-electric plant. About \$90,000 will be spent for a new reinforced concrete structure to replace two buildings destroyed by fire.

NEW ALCOHOL PLANT—Robert Maloy of Mount Vernon, Wash., is seeking a site in either Yakima or Ellensburg, Wash., for an industrial plant which could convert commercial alcohol from low-grade potatoes. Contracts have been signed with distillers and brewers for the product and the plant, with a capacity for handling 100 tons of potatoes daily, should be in operation late in July.

ROCKWOOL COMPANY WILL OPEN—Construction will be started by August on the plant of the Pacific Rockwool Co., near Dishman, which will manufacture insulation materials. Murray Estes of Moscow is president of the firm. A site of 8½ acres has been selected for the \$75,000 plant. The firm is associated with the Harney Co., Inc., Mankato, Minn.

LARGEST CRANBERRY PLANT ON WEST COAST—Construction of the largest cranberry cannery on the West Coast and one of the largest in the nation has been started at Markham by Cranberry Cannery, Inc., replacing the one burned in 1942. The new building will have ground dimensions of 80x300 feet and will be cement-block construction, with a reinforced concrete floor. The building itself will represent an investment of \$120,000, with an additional \$75,000 outlay for machinery. The plant will employ some 40 persons.

WANT A SECRET FACTORY?—The Seattle district, U. S. Army Engineers, has offered on lease to the highest bidder a 15-acre charcoal factory which was rated as "top secret" during the war, producing charcoal for gas masks.

CONTRACT AWARDED—Schorn Paint Mfg. Co. has awarded the contract for a \$150,000 addition to its plant at 1128 W. Spokane St., Seattle. The one-story and partial second story, 120x140 ft. structure will be of reinforced concrete and concrete blocks, with steel columns and beams, a steam heating plant and mechanical ventilation.

PUGET SOUND MAY BUILD PULP MILL—Puget Sound Pulp & Timber Co., Bellingham, producer of unbleached sulphite pulp, plans construction of a pulp-board factory on waterfront ground adjacent to its main plant.

WESTERN TOY MANUFACTURING TO EXPAND LATER—As soon as materials are available, Western Toy Manufacturing Co., Inc., Seattle, will build a streamlined single-story factory devoted exclusively to production of toys, with at least 30,000 sq. ft. of floor space. Max Heitlinger is pres.

UTAH

TO REHABILITATE GARFIELD SMELTER—Expenditure of \$750,000 is planned for a rehabilitation program at the Garfield smelter of American Smelting & Refining Co. Main items include replacement of boilers and installation of a 3,000 kw. generator and switchboard.

MOUNTAIN STATES TELEPHONE LETS CONTRACT—The \$750,000 contract for additions to the Mountain States Telephone & Telegraph Co. building in Salt Lake has been awarded. Project includes construction of three additional floors to the three-story building and an elevator wing.

KALUNITE PLANT ON THE BLOCK—Sale or lease of another Government owned Utah war plant—that of the Kalunite, Inc., alumina plant in Salt Lake—is proposed by the War Assets Administration.

WYOMING

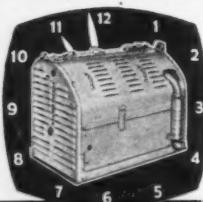
CHEMICAL INDUSTRY SLATED FOR STATE—Westvaco Chlorine Products Co. has begun the sinking of a 1,200-ft. shaft for the mining of the big trona deposit in Sweetwater County. Plans call for the construction of a processing plant capable of handling 60,000 tons of trona annually. It is estimated to cost \$2,000,000 and will provide initial employment of 60 men. If successful company plans expansion of the original plant. Since production of refined trona can be carried on only with gas, a pipe line will be required from the Church Buttes field to the plants.

RANGELY OIL MAY BE DELIVERED ON COAST—The California Company which has leased about 200,000 acres in Southeast Colorado, if it is successful in developing oil fields, plans building a pipeline to the West Coast to handle the Rangely output or to construct a refinery in Denver.



READY-POWER increases the work output of Electric trucks ¼ to ½ over any other form of truck power. Electric Trucks, WITH READY-POWER, operate at the lowest cost... are the most efficient and longest lived of any materials handling equipment. There are no costly slow-downs or "downtimes". With READY-POWER you get higher peak performance from your electric trucks... more production... more materials moved. Specify READY-POWER on new truck purchases. Convert present trucks to READY-POWER.

Ready for All Jobs



THE READY-POWER CO.
Grand River at Avery Detroit 8, Mich.
Immediate Delivery from West Coast Representatives:

KARL MOELLENDICK
7813 California Ave., Huntington Park, Calif.

GEORGE HUNDSORFER
1424—11th Avenue, Seattle, Wash.

WESTERN

TRADE WINDS

NEWS ABOUT THOSE WHO DISTRIBUTE AND
SELL INDUSTRIAL EQUIPMENT AND MATERIALS

Jess Keville has been appointed exclusive representative for Speedways material handling equipment in southern California and adjacent territory, with offices in Pomona. The Buffalo concern, Speedways Conveyors, Inc., manufactures gravity conveyors, power lifts, and the Speedtrux, "Y" Flipswitch and Speedglu.

The Patent Scaffolding Co., Inc., has returned its former offices and warehouse to its own building, 6931 Stanford Avenue, Los Angeles 1, Calif.

Ryan Metal Products division of Ryan Aeronautical Co., San Diego, has opened a Washington, D. C., office. Richard L. Peterson and James Stalnaker are going East from the San Diego plant to staff the office. Peterson is sales engineer and Stalnaker is engineering representative.

Grether and Grether, Stockton, Calif., are distributors for the new "Canton" portable floor crane. It is available in eight sizes with capacities ranging from one to three tons.

Albert W. Lohn has been promoted to vice-president of Ducommun Metals & Supply Company, Los Angeles, distributor of steel, brass, copper, pipe, tools, abrasives and industrial supplies. He will continue to serve as general manager, which he has been for the past seven years.

Acme Engineering Service of Portland, and Kelton & Perthou Co., Seattle, have been consolidated under the name of U. S. Appraisal Co., and will maintain offices in Seattle, Portland and San Francisco. Alfred V. Perthou is general manager of the company.

Robert M. Macy, formerly a lieutenant commander in the U. S. Navy, has joined the staff of McKinsey & Co. San Francisco office. He is a specialist in the field of marketing and distribution and comes from the firm's New York office.

Kuhn & Co., 711 Gibbons St., Los Angeles, will represent the Alvey Conveyor Manufacturing Co., St. Louis, in southern California, while Markwart Industrial Equipment Co., Ahern and Spear Sts., Sacramento, and 1255 East Shore Highway, Berkeley, are northern California representatives.

R. M. Duncan, P.O. Box 868, Portland, has the Oregon territory, and F. T. Crowe Corp., Walker Bldg., Seattle, continues to represent Alvey in Washington.

Harold C. Brooks, Inc., is exclusive national sales director of Winkler & Smith Citrus Products Company, Inc., Southern California citrus packer. Mr. Brooks was affiliated with Hunt Foods, Inc., for many years in the capacity of vice-president. Winkler & Smith pack the Anagold products.

Chemical & Pigment Co., a division of Glidden Co., has set up a new West Coast sales organization. New sales offices are located at 766 Fiftieth Ave., Oakland. New representatives are: William Ellis, San Francisco East Bay area; Raymond Wilkins, Los Angeles; Mount & Alsop Co., Portland; Dorothy B. Smith, Seattle, and Harrison & Crossfield Co., Vancouver.



Carl Wadsworth has just been appointed district traffic manager for Bethlehem Pacific Coast Steel Corp.'s southern area operations. He will maintain headquarters at Bethlehem's Los Angeles plant in Vernon. He has had a wide and varied experience in the traffic field.

The West Coast sales office of Grasselli chemical department, E. I. duPont de Nemours and Co., is now located in Tacoma, Wash.

Instruments Supply and Service, Tacoma, has a maintenance, calibration and repair service for mechanical, electrical, marine, recording and industrial instruments. Company is Pacific Northwest representative for Helicoid division of American Chain and Cable, Weksler Thermometer Corp., and Owesen and Co.

Seiberling Rubber Co. will establish its Pacific Northwest headquarters in a new warehouse to be built on N. W. Pettygrove Street, Portland. The firm is now at 325 N. W. 12th Avenue, Portland.

George C. Tolton is the new sales representative for the Northwestern states for the American Foundry Equipment Co., Mishawaka, Ind. He will have offices in Seattle. Mr. Tolton has an engineering and sales background. Mitchell R. Christensen will be sales representative in Denver. He is a consulting engineer.

Earl Hallas is general sales manager of United States Steel Products Company, Boyle Manufacturing Division, 5100 Santa Fe Avenue, Los Angeles 11, Calif.

C. W. Marwedel, 1235 Mission St., San Francisco, is now an authorized distributor of metal carbide products of Carbology Company, Inc., Detroit. Stores and offices are maintained in San Francisco and at 11th and Alice Streets, Oakland 7, Calif. Carbology tools, blanks, wheel dressers and masonry drills are carried in stock.

Cinema Engineering Co., Burbank, Calif., will serve as field engineers for Shallcross Mfg. Co., Collingdale, Pa., on the combined product lines in the Southwestern states. Company makes precision attenuators and other Variaton products.

William G. Tawse, West Coast stud welding engineer, will be field engineer in Southern California for Nelson Sales Corp., Lorain, O., distributors of Nelson stud welding equipment and

studs. Mr. Tawse, who replaces M. E. Tougas, may be addressed at Box 469, Los Angeles, Calif.

Ed J. Towey, Minneapolis, Minn., is appointed sales manager, ind. div., Adel Precision Products Corp., Burbank, Calif.

Production Management Engineering Associates, Inc. has absorbed the industrial engineering service firm of Albert Ramond and Associates, Inc., San Francisco. Mr. Ramond has resigned as officer and director of the predecessor firm. Pacific Coast headquarters of the new firm will be maintained in the Russ Building, San Francisco. E. D. Hayward, Los Angeles, has been named vice-pres. and secretary, and A. M. Brenne and R. L. Kron, directors. Charles W. English is pres. of the organization.

George Dixon, San Francisco, former head of aviation sales division of Tide Water Associated Oil Company, who was recently discharged with the rank of commander in the U. S. Navy where he served for more than five years, has rejoined the oil company. Mr. Dixon started with Associated in 1938.

New firms handling distribution of Parker industrial fittings and tube bending equipment for construction of hydraulic, lubrication and fluid conveying systems are: General Machinery & Supply and American Brass & Copper Co., both of San Francisco; Metropolitan Supply Co., Los Angeles, and Eagle Metals Co., Seattle.

Arthur S. Kopp, Director of Industrial Engineering for Microstat in California, Oregon, Washington and Utah, has been appointed sales manager for Microstat Company of Illinois and is transferring to Chicago to take over his new duties.

Shifts in personnel by J. A. Zurn Mfg. Co., Erie, Pa., result in appointment of Earl Morris, formerly with Crane Co., as district representative in charge of the Los Angeles office.



Jack Thaler (left), co-owner and sales manager of Thaler Pipe & Supply Co., has returned to the industrial piping field after service with the Navy as engineering and piping consultant. Saul Belilova has joined the sales department of Engerprise Engine and Foundry Company in its Diesel engine division. He comes from Boeing Aircraft, Seattle. The Thaler firm is Northern California distributor for Taylor Forge & Pipe Works, Chicago, Ill., seamless steel products.

James H. Tiller, Jr., formerly Southern District manager for Barber-Greene Company and more recently colonel in the Engineers Corps, U. S. Army, has been appointed manager of the Phoenix office of the Brown-Bevis Equipment Company. He has had a wide experience with black-top equipment, and has served as construction superintendent for the Canada Construction company and as assistant to the division engineer at Richmond, Va., and Atlanta, Ga. He received his engineering degree from the Citadel, Charleston, S. C. While in the Army he had charge of operation and maintenance of equipment.

Sam A. Mesher has opened his own supply house for small high speed cutting tools and machine shop supplies in Portland, Ore. Mesher has been a specialist in the sale of similar equipment for some 15 years. His son, T/3 Herman E. Mesher, will have charge of the store when he returns from overseas service.

(Continued on Page 86)



Thomas G. Franzreb (left) and Donald Keating, have joined the technical service division staff of Turco Products, Inc., manufacturers of chemical compounds for maintenance and cleaning. Both men are in the L. A. office, and both served as officers in the U. S. Navy.

TRADE WINDS (Cont'd from page 85)

S. J. Larson of Ponca City, Okla., has been named Continental Oil Company's division manager at Albuquerque, N.M. Larson has been assistant division manager at Ponca City since 1932. He succeeds W. B. Elliott recently made company commission agent at El Paso.

Louie C. Aston, who served as a lieutenant colonel during the war, has returned to the Washington Water Power Company as assistant sales manager of the company's Spokane division.

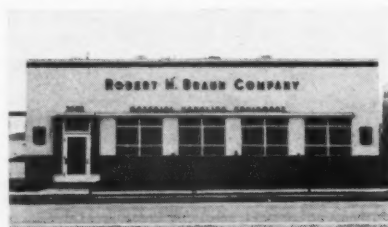
A. F. Rice has been appointed Rheem Manufacturing Company's Pacific Coast manager of appliance sales. He has been identified with the appliance industry in the West for more than 25 years, serving as an executive of Western Stove Co., H. R. Basford Co., Southern California Gas Company and Occidental Stove Co. Until recently, Rice had served as major in the U.S. Engineers.

Other division appointments are: H. W. Angell, as district manager for central and northern California and Nevada district, with headquarters in San Francisco; A. R. Jewell, as sales representative for the southwest district covering Southern California, Arizona and Utah, with headquarters in Los Angeles; and F. F. Line, as representative in Oregon, Washington, Idaho and western Montana, with headquarters in Portland.

Abrasive Division of Norton Company, Worcester, Mass., has set up a new Pacific Coast distributorship. In northern California the sale and service of Norton grinding wheels to the lumber trade will be handled by the California Saw Works of San Francisco, and to the metal working trades by C. W. Marwedel, San Francisco. In the southern California area the sale and service of Norton grinding wheels

will continue to be handled by Ducommun Metals & Supply Co., Los Angeles.

In the Northwest area sale and service of Norton grinding wheels will be handled by: IDAHO—Coeur d'Alene Hardware & Foundry Co., Wallace; Salt Lake Hardware Co., Boise; MONTANA—Kalisell Mercantile Co., Kalispell; Missoula Mercantile Co., Missoula; Montana Hardware Co., Butte; Montana Hardware Co., Great Falls; OREGON—Basche Sage Hardware Co., Baker; Eugene Mill Supply Co., Eugene; The General Tool Co., Portland; Pioneer Hardware Co., Coos Bay; WASHINGTON—Campbell Hardware & Supply Co., Seattle; L. G. Isaacson & Co., Aberdeen; Washington Machinery & Supply Co., Spokane; and Wells & Wade, Inc., Wenatchee.



• Now in these new quarters at 3008 E. Olympic Blvd., Los Angeles, Calif., the Robert H. Braun Co. has facilities for a large stock of service repair parts and equipment of Clark Tractor division of Clark Equipment Co., Battle Creek, Mich.; Lyon-Raymond Corp., Greene, N. Y., and Silent Hoist & Crane Co., Brooklyn. Equipment repaired in serv. shop manned by fac. personnel.

Western Gear Works and Pacific Gear & Tool Works, Seattle, through an arrangement with Michigan Tool Company, Cone-Drive Gear Division, can now make available Cone-Drive Gears and Cone-Drive Speed Reducers to manu-

facturers in the West. The two firms will stock all sizes and assist in engineering development of special uses.

E. C. Henning is now manager of the San Francisco branch of the Fruehauf Trailer Co. He has been San Francisco sales manager for five years.

R. W. Moulthrop, 420 Market Street, San Francisco, is new sales representative for Walter L. Schott Co., manufacturers of Walsco products.

The Flexible Steel Lacing Co. of Chicago, manufacturers of Alligator steel belt lacing, V-belt fasteners and Flexco HD conveyor belt fasteners, have appointed Richard Y. Dakin and Morris B. Miller, of Dakin & Miller Co., 124 West Fourth St., Los Angeles 13, as California sales representatives, and E. R. Spragg and G. G. Spragg of E. R. Spragg & Son, 4012 E. 38th Street, Seattle 5, as Washington and Oregon sales representatives.

A new firm to serve the building industry has been set up at 55 Main Street, San Francisco—The Brookman Company—which will handle floor coverings, acoustical materials, building materials, marine deck coverings and similar lines. Connected with the firm are J. A. Mancini, owner, for several years dist. mgr. of L. D. Reeder Co., William O'Connor, and several other former employees of L. D. Reeder Co.

G. R. "Gus" Rich, owner of Rich Steel Company, Los Angeles, has announced the addition of his brother, S. T. Rich, who served as a captain in the U.S. Army Medical Corps, to his staff. The company handles and warehouses steel sheets, bars, strip and perforated metals.

Herbert W. Heckt is associated with the Denver Equipment Company of Denver, Colo. He resigned from the engineering staff of the Silver King Coalition Mines Company at Park City, Utah, to take the position.

Safeguard the Health of Your Workers Against Pneumoconiosis-Producing Dusts

★ Unusually easy breathing, light and comfortable over long periods. All parts are replaceable at very low cost.



MODEL "M500"
BM 2150—Bureau of Mines Approved

Good Health is Essential to Good Work

The "PULMOSAN" M-500 Dust Respirator has the approval of the U.S. Bureau of Mines for protection against "Pneumoconiosis-producing Dusts" . . . This Respirator provides a large filtering area in a very compact space and may be very easily cleaned for repeated use.

We also carry a full line of WELDER'S GLOVES — "PULMOTEX" SPATS and ASBESTOS SUITS, and other "PULMOSAN" Safety Equipment.

• Write for descriptive literature of "PULMOSAN" Industrial Safety Equipment—No obligation of course

Sharpe
MANUFACTURING COMPANY
1224 Wall Street Prospect 4368
LOS ANGELES 15, CALIFORNIA

Can You Improve Metal-Cleaning Operations In Your Production Cycle?

Too often metal-product manufacturers concentrate on the big things . . . the casting, pickling, machining, plating, finishing . . . while permitting the small production operations to look after themselves. But the "in-between" operations, such as the cleaning and conditioning of metals, can snap the chain in your production cycle!

Oakite has concentrated on these "in-between" metal degreasing and surface-conditioning problems for many years . . . with the result that Oakite materials provide specific degrees of cleanliness for specific metals, in preparation for specific follow-up or finishing operations. These specialized cleaners and conditioners help speed production, reduce rejects on the big operations, add to the saleability of products, and keep costs low!

Your nearby Oakite Technical Service Representative will be glad to discuss your metal-cleaning and preparation problems with you. His counsel and services are FREE. Use them TODAY!

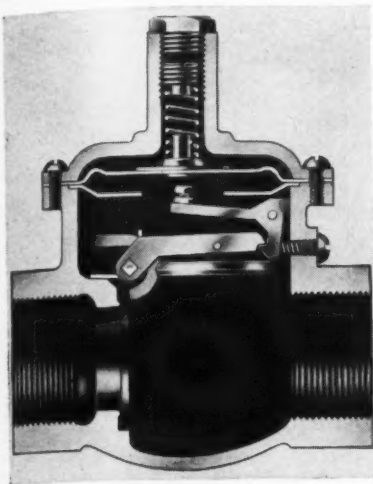
OAKITE PRODUCTS, INC.

LOS ANGELES (12) 1001 East First St., Tel. Madison 1544
SAN FRANCISCO (7) 115 Townsend St., Tel. Douglas 5640
OAKLAND (7) 1505 Wood St., Tel. Glencourt 2750
SAN DIEGO (1) 310 Fifth Ave., Tel. Franklin 0312
SEATTLE (4) 95 Connecticut St., Tel. Main 1207
PORTLAND (9) 1238 N. W. Glisan St., Tel. Broadway 1281
STOCKTON 401 W. Weber Ave., Tel. Stockton 6-6564
SPOKANE (8) E. 41 Gray Ave., Tel. Riverside 8063

OAKITE Specialized **CLEANING**
MATERIALS—METHODS—SERVICE—FOR EVERY CLEANING REQUIREMENT

THE SHOWCASE

416



This new Warden Valve shuts off the flow of any fluid when pressure drops below determined level. Each valve manually set and can be easily installed in gas or oil supply lines for industrial furnaces. Available from 1½" to 8" diameter, bronze, they are self draining. Security Valve Company, Los Angeles, California.

417

Sprucing Up the Plant—Aluminum awning for industrial plants that automatically rolls up into a neat compact roll at the top of the window is now available. Doesn't sag, shrink or stretch, and is finished in a protective coat of baked aluminum enamel. Available in a range of colors, company claims it helps keep plant temperature down. Long life. *Aluminum Awning Company, Division of Orchard Bros., Inc., Rutherford, N. J.*

418

Insulated Infra-Red Units—Miskella Insulated Ovens now may be constructed using Super-Heat Lamped and Un-Lamped units or combinations of both. Both are standardized upon a width of 10¼" and depth of 8". Length depends on number of lamps. Semi-gloss white porcelain enamel is standard finish for faces of both units. Finish cannot corrode, is sanitary and easily cleaned. Back cover easily removed for maintenance and service. *The Miskella Infra-Red Company, Cleveland 4, Ohio.*

419

Pennsalt's New Products—A new rust preventing agent for use in water on ferrous metals before they are painted, enameled or between machine operations is announced. Company also is in production on Pennsalt Cleanser A-22 for aluminum alloys and PM-95, an acid base cleaning and descaling compound. The A-22 is a general purpose soak tank cleaner, while PM-95 is a specially prepared cleaning and descaling compound. *Pennsylvania Salt Manufacturing Co., Philadelphia, Pa.*

420

Multiple Spindle Turret and Variable Speed Unit—As many as six operations can be performed on the drill press when using the Weaver "Multi-6-Spindle." It is a turret attachment having six vertical spindles. The unit is attached to the drill press column and is absolutely rigid. Does not alter the drill press. Working stroke approximately four inches. Maximum size of tool shank is ½". The "Variable Speed" unit is designed primarily for V-belt

driven drill presses. It increases or decreases speed ratios between drill press motor and drive. No maintenance required. *Weaver Sales Division, San Diego 1, Calif.*

421

Speeding Up Delivery—New folding steps for trucks are available. Can be used on flat racks, stake bodies, vans, trailers and semi-trailers, and are easily installed with four bolts. In closed position the steps are compactly folded under the truck bed. Four bolts securely fasten the step to the under side of the truck platform. Made of all metal, they are built to support a weight of 1,000 pounds, and themselves weigh 40 pounds. *Safety Step Company, Los Angeles 35, Calif.*

422

Unloading Automatically—Almost complete automatic unloading of box cars is possible with a newly developed unloader for Towmotor lift trucks made by the Towmotor Corp. The unloader is operated by the driver from his regular position. Device available for all sizes of lift trucks. It is hydraulically operated by the Towmotor driver from his regular position. Other applications also possible. *Towmotor Corporation, Cleveland 10, Ohio.*

423

Need a Portable Oxy-Acetylene Cutting Outfit?—For that hard-to-get-at job, a new portable oxy-acetylene cutting outfit is now available. Pak-Kut weighs only 56 pounds complete. It uses the oxy-acetylene flame cutting process. Two aeronautical shatter-proof oxygen cylinders, an acetylene tank of 10 cu. ft. capacity, pre-set regulators, test gauge, hoses, cutting torch, wrench, goggles, gloves and instruction manual are included. Mounted in a flame resistant canvas pack. *National Welding Company, San Francisco, Calif.*

424

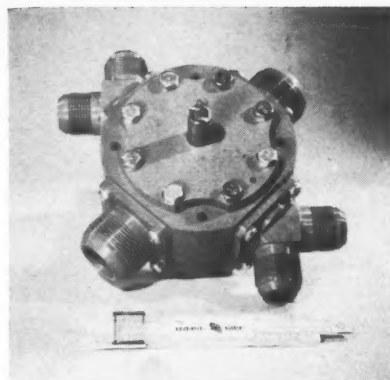


This new "selecting spur curve" permits users of Rapid-Wheel Conveyors a choice of directing flow of materials either straight through to one destination or around spur curve to line running at right angle to main line. Switch control is operated manually. Manufactured in 12" and 18" widths. Adjustable guard rails with standard equipment. Spur curve 49". Produced by Rapids-Standard Co., Inc., of Grand Rapids 2, Mich.

425

Now Diversified Use of the Same Cylinder—A streamlined cylinder, without cumbersome tie rods requires less space for installation and is designed to permit a diversified use of the same cylinder. Caps of heat-treated aluminum alloy and castings rotate a full 360° on the cylinder without disturbing the seal. No metal-to-metal contact exists at any point of wear. May be used for actuation by air, water or oil. Can be mounted in any number of different ways. Literature available. *Modernair Corporation, Oakland 8, Calif.*

426



A line of industrial two-way, three-way and four-way selector valves is now available, of which this is the 4-way type. Can handle flows up to 2,500 gallons an hour. Lightweight, low operating torque, not affected by back pressures, unaffected by temperatures from minus 65 degrees F. to plus 200 degrees, and usable with any type of liquid, they are easily serviced. *Hydro-Aire, Incorporated, Los Angeles 46, California.*

427

A Twelve-Year-Old Can Carry It—A new lightweight hand truck, the Magnelux Zephyr I, is now available. Made of cast magnesium alloy, it weighs only 27 pounds. All stress points are doubly reinforced, and balanced so that when unloaded it automatically falls forward. Wheels of cast magnesium, equipped with ball bearings and Zerk lubricated. Nose made of rust-proof steel. *Magnelux Manufacturing Co., Los Angeles 13, Calif.*

428

Going Out in the Field?—Engineers in the field will be interested in the new McDonald Snake Bite Kit of sturdy plastic for treatment of poisonous snake bites. Suction device, lancet and other materials packed ready for instant use. Illustrated directions on inside cover of kit. Literature available. *B. F. McDonald Co., Los Angeles 37, Calif.*

429

Speeding Up Production—Live centers for modern carbide cutting speed up production. Coles Model 100 heavy duty "Live Center" withstands pressure up to 2,400 pounds, it is claimed. The alloy steel rotating center point is hardened to 62-65 Rockwell. Each live center is guaranteed to have true concentricity within .0002". Duplex ball bearings take full radial load with minimum friction and wear. Centers are lubricated for life. Bulletin available. *The Raymond Corp., Cleveland 15, Ohio.*

430

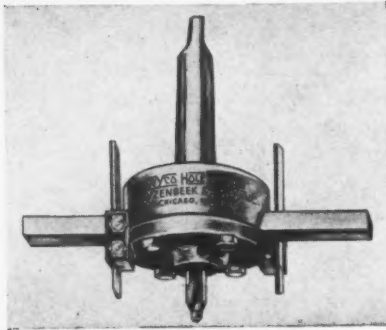
Improved Oil-Fuse Cutouts—G.E. has improved its line of heavy-duty oil-fuse cutouts for overcurrent protection of power distribution systems in the 2,400-, 4,160-, 4,800-, and 7,200-volt classes. Cutouts utilize new universal fuse links and provide higher interrupting ratings, clearing fault currents as high as 11,000 amperes, depending on rating. No exposed live parts and no arc flames ejected. Bulletin GEA-732-J available. *General Electric Co., San Francisco, Calif.*

431

Marine Equipment Control—A hydraulic control that will outlast a boat is still "running strong" under a rated load of 100 inch pounds. The Model "C" is a hydraulic remote control which has industrial uses as well as marine. Company produces a variety of hydraulic equipment. *Ellinwood Industries, Los Angeles, Calif.*

(Continued on page 88)

432



• The new heavy duty hole and washer cutter for production work cuts clean, round holes or washers from steel plate as accurately to size as a boring tool. Fits 1" drill chuck or can be supplied with Morse taper shank. Its tool holders have been constructed of heavy steel. Wyzenbeek & Staff, Inc., Chicago 22, Ill.

433

Telescopic Frame Adopts Lift Truck—A telescopic frame which increases the elevated height of the platform to 84 inches, is now available. In lower position overall height of 69 inches is maintained. The section is of same tubular construction as base frame, keeping added weight to a minimum. Hand or motor-driven pump available. Lyon-Raymond Corp., Greene, N.Y.

434

Two New Oakite Products—Oakite compositions, Nos. 98 and 99, are now on the market. No. 98 is a self-emulsifying, water-soluble solvent for use primarily in pressure spray washing machines. No. 99 helps in the office by speeding up and simplifying the cleaning of typewriters, adding machines and similar office equipment. Literature available. Oakite Products, Inc., New York 6, N. Y.

435

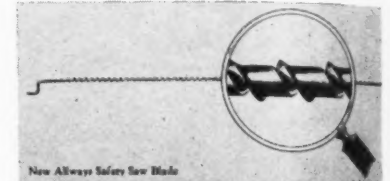
It Takes Only One Man to Handle the Load—The Blue Heron Truck Cranes save loading and unloading time by enabling one man to handle loads of up to one ton. Cranes mount in a well or socket which is permanently attached to the

truck. Available in three capacities, 1 ton, ½ ton and 500 pounds. The last can be mounted on a motorcycle sidecar or warehouse truck. Cam Tool Co., Inc., Oakland, Calif.

436

Cam-Stat Thermostat—A small, compact thermostat for general application at 120-240 volts A.C. meets Underwriters' Lab requirements, can be used for water heaters, furnace fans, furnace limit controls, room thermostats. Constructed of aluminum and plastic, it has a high current carrying capacity, a wide selection of temperature ranges, resistance to vibration and switching arrangements. Cam-Stat, Inc., Los Angeles, Calif.

437



• This new "Allways" saw blade for hand coping saws or power operated jig saws does away with old style flat section blade. It cuts in any direction without requiring turn of the saw frame. Eliminates blade binding or breakage. Simplifies intricate work. Tyler Manufacturing Company Santa Monica, Calif.

438

Need a Lightweight Conveyor?—The Tote-All Zephyr weighs only 135 lbs. (without motor) and is 12 ft. long. It is made of special alloy steel and is corrosion and abrasion resistant. Power furnished by gasoline engine mounted above conveyor out of dust, dirt and spillage. Can be used for conveying sand, salt, coal, gravel, fertilizer, etc. Literature available. Material Movement Industries, Chicago 4, Ill.

TRUMPIS-COLLAR & ASSOCIATES

Consulting Industrial and Production Engineers

Specialists in Tool, Equipment, Product Development and Design. Plant Layout Material Handling, Fabrication and Assembly Methods, and all Factors Effecting Low Cost Production.

Affiliated with Smith-Hinchman & Grylls of Detroit, Mich.

2511 Wilshire Blvd.
Detroit

Los Angeles 5
Washington, D. C.

Phone: DRexel 8194
New York

Rely on HAWS

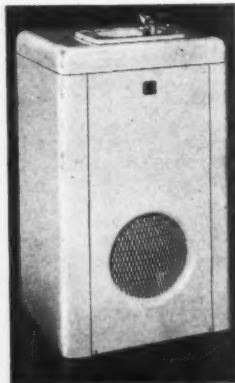
to supply cool, refreshing Drinking Water!

★ From HAWS Electric Water Coolers and HAWS Drinking Fountains you can be assured of drinking water with complete sanitation and satisfaction. Install HAWS Electric Water Coolers and Drinking Fountains NOW! Write for literature.

HAWS

Drinking Faucet Co.

1808 Harmon Street Since 1909 Berkeley 3, Calif.
Agents and Sales Representatives in All Principal Cities



DO YOU NEED

SODA ASH?

Approximately 500 tons of Trona, a naturally occurring sodium sequecarbonate, is available for sale at our South Gate plant. It is unground and contains about 35% Na₂O along with some moisture and 3% of sand and other water soluble matter. Make an offering.

WRITE OR CALL

A. R. MAAS CHEMICAL CO.

4570 Ardine St., South Gate, Calif. KImball 2214

There is no substitute for **EXPERIENCE!**

INDUSTRIAL CONVEYORS • POWER TRANSMISSION EQUIPMENT
DRYERS • GEAR MOTORS • MARINE SUPPLIES

J. D. CHRISTIAN ENGINEERS

480 POTRERO AVENUE

SAN FRANCISCO 10

HEMLOCK 1300

YOURS FOR THE ASKING

2008

For Football Fans Only—Available for lunch-
con, club, lodge and church meetings, Tide
Water Associated offers a 16 mm. color and
sound print of the classic 1945 Army-Navy
clash. Commentary handled by Bill Slater. See
Glenn Davis and Felix "Doc" Blanchard in
action. *Tide Water Associated Oil Company,*
San Francisco, Calif.

2009

Airspeed Indicator Described—A new 8-page
illustrated bulletin describes the Airspeed In-
dicator Test Unit, known as Model A-921, for
calibrating airspeed indicators. The test unit
consists of a pressure generator unit and a two-
tube manometer with scales graduated directly
in air speed. Illustrated with photographs and
drawings it gives a complete description of the
test equipment and prices. *The Meriam Instru-*
ment Company, Cleveland 2, Ohio.

2010

Airco Camographs—A new bulletin describes
Nos. 4 and 5 oxyacetylene cutting machines,
Airco Camographs, giving specifications, oper-
ating instructions and electrical requirements.
Illustrated and has color diagrams of respective
cutting ranges. *Air Reduction Sales Company,*
New York City 17, N. Y.

2011

Rex Idlers—A new 26 page bulletin on the
complete line of Rex Belt Conveyor Idlers is
now obtainable. Photographs, tables, charts,
diagrams and cutaway views are used profusely
to illustrate and describe the items. The two
newest Rex Idlers — the Impact-Cushioning
troughing idler and the rubber covered spiral
return idler are fully described. Bulletin No.
463. *Chain Belts Company, Milwaukee 4, Wis.*

2012

How to Buy Standard Pyrometer Supplies—
Clear and concise information to purchasing
agents and instrument men on how to order
thermocouples, protecting tubes, thermocouple
wire, lead wire, insulators, etc., is included in
the new Buyers' Guide. Complete descriptions
and prices on various types of thermocouples
for applications in all industries are at hand.
The Brown Instrument Co., Accessories and Sup-
plies Division, Philadelphia 44, Pa.

2013

New Metal Processing Bulletin—Now pub-
lished is a 12-page booklet describing the pH
controlled cleaning methods and materials for use
in the metal processing industries. Many clean-
ing problems are illustrated and discussed brief-
ly; electro-cleaning, still cleaning, how to pre-
pare for painting, and anti-rust methods. Kelite's
suggestion service described. *Kelite Products,*
Inc., Los Angeles 54, Calif.

2014

Rotary Pumps — Bulletin No. 10 describes
Series K rotary pumps, together with pertinent
facts concerning design, construction details and
specifications. Pumps can be used for Diesel
fuel oil transfer work, pressure lubricating jobs,
hydraulic service, fuel supply duty, industrial
and large domestic oil burners, to name a few.
Charts and photographs included. *George D.*
Roper, Corp., Rockford, Ill.

2015

Boiler Room Equipment—A four-page bulle-
tin, WG-1815, describes the Yarway line of
water column trycocks, and is available to those
interested in boiler room equipment. Specifica-

tions, dimensions and price list included. *Yar-*
nall-Waring Co., Philadelphia 18, Pa.

2016

Cone-Drive Gear Sets Described — A 16-
page, fully illustrated booklet, Catalog No. 700,
describes a complete new line of standardized
carried-in-stock cone-drive gear sets. All of the
99 sizes and ratios of standardized gear sets are
listed in the catalog. The gear design engineer
has at his fingertips information to enable him
to select the size and ratio of gear best suited
to each specific power transmission requirement.
Michigan Tool Company, Detroit 12, Mich.

2017

Light Reading—It may be entertaining, but
B. F. Goodrich's new booklet, "You've Got
Something There," has a lot of helpful sugges-
tions. Cartoon sketches bring home the points
discussed on each page. Text is brief. Booklet
describes how the company suggestion system
works and benefits derived. *The B. F. Good-*
rich Co., Akron, Ohio.

PACIFIC COAST MACHINE & TOOL DESIGN CO.

Tools • Jigs • Fixtures • Dies • Molds
• Special Machinery •

Inquiries Solicited

P.O. Box 1013 Beverly Hills, Calif.

Salesman Wanted

Top-notch man capable of earning \$100
weekly. Experienced selling industrial
cleaners, chemicals, and janitorial sup-
plies. State qualifications. Write Box
9716, Dept. W.I. Sta. S., Los Angeles 5,
California.

Johnson Wire

All types of high carbon — bright, tinned and
alloy finishes — round, half round, flat, special
shapes.

JOHNSON XLO MUSIC WIRE — the wire of a
thousand uses. Specially processed rod drawn to
exact size, from .003" to .200". Smooth, bright
polished surface.

JOHNSON SPECIAL ALLOY COATED WIRE
—.003" to .080". This smooth, bright satin finish
resists corrosion, acts as a lubricant, reduces tool
wear, withstands temperatures up to approximately
700° Fahrenheit. Used successfully where extreme
acid and gas fumes exist. The physical properties
of this wire are not affected by this special coating.

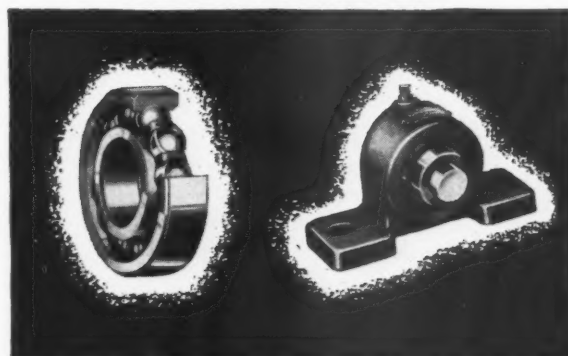
Warehouse Stock:

11641 Mona Blvd., Los Angeles. Phone Kimball 2595

JOHNSON STEEL & WIRE CO., Inc.
WORCESTER 1, MASSACHUSETTS

FAFNIR

BALL BEARINGS



any TYPE, any SIZE, for any PURPOSE!

Fafnir Ball Bearings help you save installation
time, improve machine performance, and reduce
maintenance and power costs.

There's a Fafnir Distributor serving your trad-
ing area. The Fafnir Bearing Company, New
Britain, Connecticut.

Los Angeles: 1818 South Flower St.
San Francisco: 434 Larkin St.
Seattle: 611 East Pine St.

NEW MOSLER SAFE

Double door, 4000 lb., size 76x52x39. Completely fitted interior of all metal, with locking legal and letter size files, card files and storage drawers. Four hour fire rating. Immediate delivery. For further information write or phone L. J. R. Stateler, 973 San Pablo, Albany, Calif., Landscape 5-6852.

Let us help you select MATERIALS for CONSTRUCTION

Steel frame buildings
with
corrugated roofing
and siding

E. S. BANTA COMPANY
478 Jackson St. San Francisco 11

O'BRIEN-MORRISON

- INDUSTRIAL DESIGN
- PRODUCT DESIGN
- TOOL DESIGN
- METHODS ENGINEERING

INDUSTRIAL ENGINEERING

Room 452 Central Bldg., Seattle 4, Wash.

PLANT ENGINEERING CO.

Engineering Designers

Product - Tooling - Plant Layout
Building - Equipment - Special Machinery

408 S. Spring St. MI. 0788 Los Angeles 13, Calif.

CHEMICAL ENGINEER of broad training and experience now employed in East, desires position of responsibility on West Coast. P. O. Box 385, Los Gatos, Calif.

INDEX TO ADVERTISERS THIS ISSUE

Advertiser	Page	Advertiser	Page
Acme Steel Company.....	24	Link Belt Co., The.....	27
Acousti-Celotex Distributors in the West.....	10	Lyon-Raymond Corp.....	83
Aladdin Heating Company.....	78	Maas, A. R., Chemical Co.....	81 & 88
Albany Furniture Co.....	90	Master Electric Company.....	76
Alvey Conveyor Mfg. Co.....	32	McCarty Company, The.....	14
American Pipe & Steel Corp.....	61	Multiphase, Inc.....	90
Anaconda Copper Mining Co.....	11	Oakite Products, Inc.....	86
Anaconda Wire & Cable Co.....	11	Osgood Company.....	63
Baker Steel & Tube Company.....	60	Pacific Coast Gas Assoc.....	67
Banta, E. S., Company.....	90	Pacific Coast Machine & Tool Design Co.....	89
Bethlehem Pacific Coast Steel Corp.....	15	Pacific Telephone & Telegraph Company.....	79
California Barrel Company.....	3rd Cover	Pacific Tube Company.....	4
Carnegie-Illinois Steel Corporation.....	33	Plant Engineering Company.....	90
Christian, J. D., Engineers.....	88	Protected Steel Products, Inc.....	26
Clipper Belt Lacer Company.....	83	Rapids-Standard Company.....	82
Colson Equipment & Supply Company.....	66	Ready Power Company.....	84
Columbia Steel Company.....	33	Reconstruction Finance Corp.....	17, 18, 19 & 20
Cooper, J. T., Steel Company.....	83	Redington, F. B., Company.....	76
Crocker First National Bank.....	76	Revere Copper & Brass, Inc.....	12
Danly Machine Specialties, Inc.....	13	Richfield Oil Company.....	28
Detroit Hoist & Machine Company.....	70	Ridge Tool Company.....	30
De Young Bros. Machinery Co.....	81	Ruger Equipment Company.....	22
Downs Crane & Hoist Company.....	80	Service Caster & Truck Corp.....	77
Duff Norton Mfg. Co.....	69	Sharpe Mfg. Co.....	86
Elwell-Parker Electric Company.....	23	Shell Oil Company.....	51
F. A. B. Mfg. Co.....	61	Signode Steel Strapping Co.....	29
Fafnir Bearing Company.....	89	Smoot-Holman Co.....	71
Fairbanks-Morse & Company.....	31	Southern California Telephone Co.....	79
Farval Corporation.....	82	Speedways Conveyors, Inc.....	84
Flexible Steel Lacing Company.....	73	Square D. Company.....	3
Fruehauf Trailer Company.....	57	Standard Conveyor Company.....	65
Fuller, W. P., Company.....	16	Standard Oil Company.....	34
Galland-Henning Mfg. Co.....	68	Stauffer Chemical Company.....	64
Garratt-Callahan Co. of Calif.....	70	Stephens-Adamson Mfg. Co.....	4th Cover
General Excavator Co.....	63	Stuart Oxygen Company.....	73
Greenberg's, M., Sons.....	78	Tennessee Coal, Iron & Railroad Co.....	33
Harnischfeger Corp.....	55	Tide Water Associated Oil Co.....	8
Haws Drinking Faucet Co.....	88	Trumpis-Collar & Assoc.....	88
Hubbard Spring Company.....	72	United States Steel Corp.....	33
Independent Pneumatic Tool Co.....	25	United States Steel Export Company.....	33
Johnson Gear & Mfg. Co., Ltd.....	62	Victor Equipment Company.....	2nd Cover
Johnson Mfg. Corp.....	80	War Assets Administration.....	17, 18, 19 & 20
Johnson Steel & Wire Co., Inc.....	89	Western Light Metals, Inc.....	72
Johnston, A. P., Company.....	90	Western Pipe & Steel Company.....	9
Keratest-Pacific Company.....	21	White Motor Co.....	30-8
		Wrigley, Jr., William, Co.....	58

RAINBOW IN A BOX



THE SPECTROGRAPH makes possible the detection of all metallic elements in any sample even when present in extremely small amounts. Thus it provides an invaluable service in control and research problems for almost every industry. ★ And the spectrograph is only one of the many special Multiphase facilities available to industry. A call or letter will bring you at no obligation a Multiphase representative to tell you how Multiphase may serve you.

MULTIPHASE
Laboratories
351 EIGHTH STREET - SAN FRANCISCO - UNDERHILL 5300

Johnston Stainless Welding Rods

DISTRIBUTED BY

ANDERSON EQUIPMENT CO.
644 E. Florence Avenue, Los Angeles 1
ARIZONA WELDING EQUIPMENT CO.
238 South Central Avenue, Phoenix, Arizona

J. E. HAZELTINE & CO.
Second Avenue and Ash Street
Portland 4, Oregon
510 First Avenue, South
Seattle 4, Washington

RENPRO PRODUCTS CO.
P. O. Box 2135 Terminal Annex, Los Angeles 84
WELDING SERVICE SALES, INC.
926 Howard Street, San Francisco 1

WHEREVER A PRODUCT GOES, IT GOES IN A CONTAINER



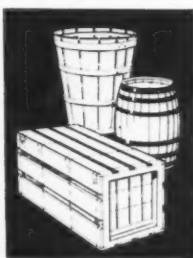
PERSONAL ATTENTION TO SAFETY

The nearest your products can get to a personally escorted trip to market is to travel there on a man's head. Failing that, they need container-protection engineered to match the strides of modern transportation.

Cabco gives all commodities, from farm or factory, the sure protection that begins *before* they start for market. It's the personal attention of engineers trained to foresee the kinds of stresses and strains enroute, and backed by more than 60 years of experience in the field of wooden containers. Cabco engineers can be counted on to come up with sensible solutions for the most specialized problems. You'll like their work.

CABCO CONTAINERS

Designed to Fit...Engineered to Protect



On-the-Spot-Service: Cabco engineering begins out in the orchards, factories, fields—bringing together the right product and the right container. Next, Cabco barrels, boxes, tub baskets, unitized covers—all Cabco containers—are made on the Pacific Coast in our own sawmills. You cut out guesswork when you call in Cabco. It covers the West.

Exclusive Sales Agents:

DUFF-MARION & CO.

*Distributors of sawn shook and Cabco containers
for shipping all fruits and vegetables*

100 Bush Street, San Francisco 4, California
2581 E. Eighth Street, Los Angeles 23, California

1173

CALIFORNIA BARREL CO., LTD.

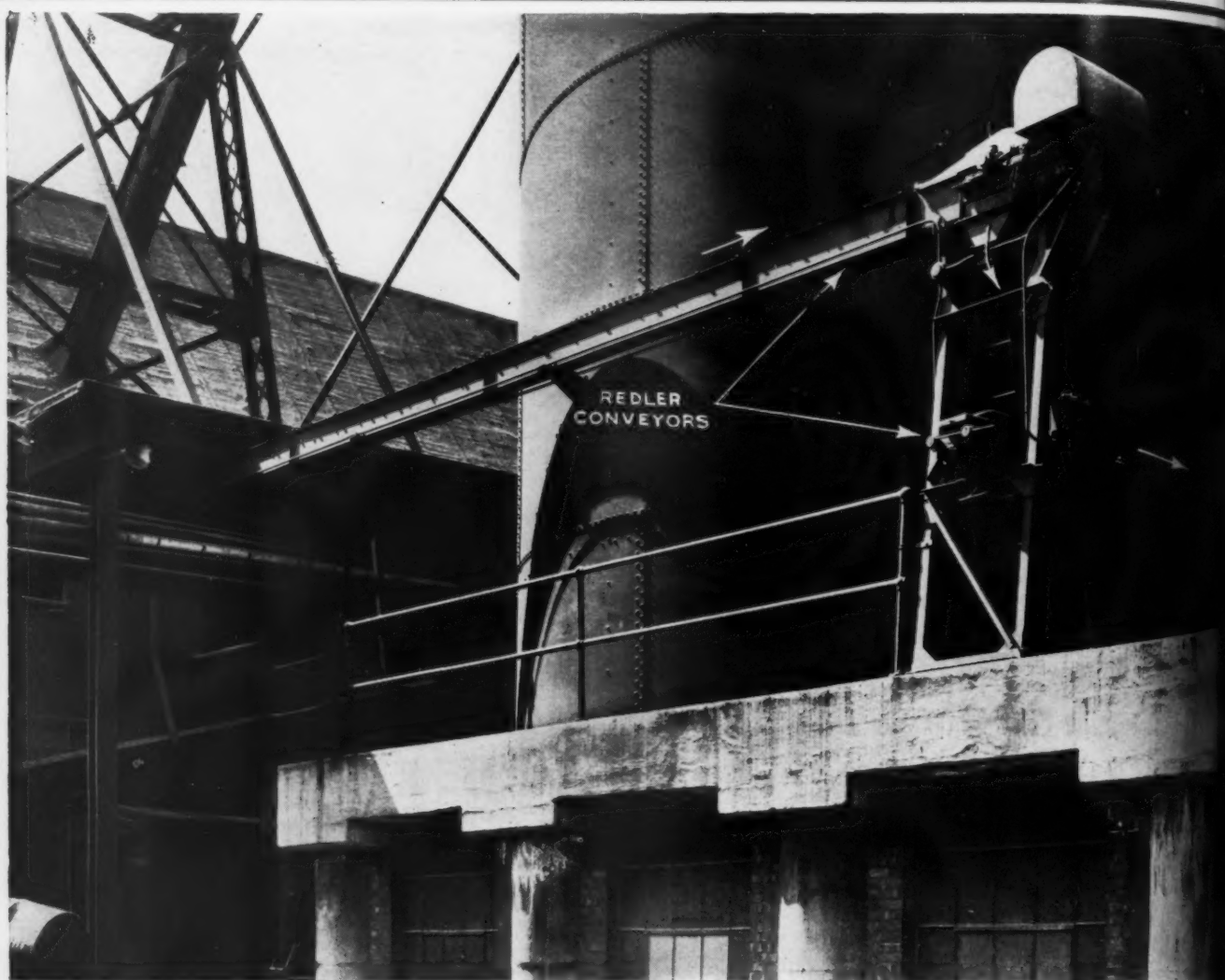
Since 1883

100 Bush Street, San Francisco 4, California

Offices: 2581 East Eighth Street, Los Angeles 23, California

501 Dooley Building, Salt Lake City 1, Utah

Plants: Arcata, San Francisco and Los Angeles, California



REDLER Conveyors speed materials from one building to another within sealed casings, which eliminate any danger of product contamination.

Another Food Handling System

Engineered by **S-A**

To Seal Out Dirt While Moving Food Fast

● The material handling problems of the food industry are *special* problems. Raw materials, semi-processed and finished goods must be handled fast. To handle food swiftly, indoors and out, and keep it absolutely free of dirt and contamination, calls for special handling techniques and equipment.

Both are supplied by Stephens-Adamson, for S-A manufactures a *complete* line of machinery units — conveyors, elevators, feeders, etc. — designed to lock out dirt and dust. S-A has the engineering ability to design those units into systems that will handle materials rapidly and safely. Full information is available on request.

582 Market St., San Francisco 4, Calif.
636 Dwyer Block, Salt Lake City, Utah

STEPHENS-ADAMSON MFG. CO.
3227 E. 97th ST., LOS ANGELES 11, CALIF.

1037 E. Broadway St., Portland, Ore.
1329 East Marginal Way, San Francisco

